

A N
A B R I D G E M E N T
O F
Baron VAN SWIETEN's Commentaries
UPON THE
A P H O R I S M S

OF THE CELEBRATED
Dr. HERMAN BOERHAAVE,
Late Professor of Physic, &c. in the University of LEYDEN.

CONCERNING
The KNOWLEDGE and CURE of DISEASES.
By COLIN HOSSACK, M. D.
OF COLCHESTER,
Physician to his late Royal Highness FREDERICK
PRINCE OF WALES.

*Quidquid præcipies, esto brevis; ut cito dicta
Percipiant animi dociles, teneantque fideles.*
HORAT.

IN FIVE VOLUMES.

VOL. III.

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A N
A BRIDGE MENT

OF
BACON VAN SWINTER'S COMMENTARIES

ON THE

A PHORISMS

OF THE CELEBRATED

DR. HERMANN BOERHAAVE,

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Prince of Wales.

Quidquid precipies, esse precor in diebus
Precipias animi doctor, medicina debet
Hoc est

IN FIVE VOLUMES.



LONDON

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ERRATA in Vol. III.

Page	57.	Add to Aph. 930.—are more particularly useful,	
	90.	Line 31, for vomit, read vomiting.	
	111.	Aph. 969, for always, read already.	
	116.	Aph. 977, for profusion, read protrusion.	
	123.	For Ketelaer, read Ketelaer, and every where.	
	132.	Aph. 989, for cuts, read eats.	
	152.	For Kildanus, read Hildanus.	
	203.	Aph. 1058, for nerves read nervous.	
	223.	Aph. 1075, line 24, for as periodic, read and periodic.	
	244.	Aph. 1092, for or, read of.	
	281.	Line 21, after on, add to.	
	307.	Line 17, for Statiticianus, read Statiticianus.	
	308.	For Eugalenus, read Eugalenus.	
1007	1007	an apoplexy.	—
1008	1008	a cramp.	—
1009	1009	a curus.	—
1010	1010	chronical diseases.	—
1011	1011	the pally.	—
1012	1012	the epilepsy.	—
1013	1013	melancholy.	—
1014	1014	having madness.	—
1015	1015	caving madness.	—
1016	1016	the ichthy.	—
1017	1017	the cachexy.	—
1018	1018	the emphyema.	—

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CONCERNING THE

KNOWLEDGE and CURE of DISEASES.

Of a PLEURISY.

A P H O R I S M DCCCLXXV.

A Pleurisy is said to be present when the patient labours under an acute continual fever, with a hard pulse, and a sharp, pricking, inflammatory pain in the side, which in inspiration is greatly increased, but in expiration, or holding in the breath, less. It is also less violent when the breathing is performed chiefly by the abdominal muscles, without moving the thorax; there is likewise a continual cough, which excites great pain, and is therefore stifled by the patient.

Pain and an acute continual fever always attend every pleurisy; without these it cannot properly be

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called

called a pleurisy: but every pain of the side ought not to be intitled pleuritic, as Trallian has well observed. *Pain, therefore, with an acute continual fever, are the pathognomonic signs of a pleurisy; and this pain must be likewise sharp and pungent, like that which arises from a distention of inflamed vessels.* See Aph. 382.

A P H. DCCCLXXVI.

WHENEVER, with these symptoms, there are also symptomatic spittings from the lungs, the disorder is called a *moist pleurisy*; but when these are wanting, it is called a *dry pleurisy*.

This aphorism treats of the dry and humoral, or moist pleurisy; of the rest we shall speak in the following aphorisms.

A cough is almost a perpetual attendant on a pleurisy. As spitting is of such moment in a peripneumony, and as a pleurisy itself is frequently terminated by a spitting, every skilful physician should observe, in the beginning of this disease, whether the cough be attended with a spitting, and of what kind it is; for a dry pleurisy is by all condemned as the most dangerous, the most troublesome to cure, and most difficult to bring to a crisis, as it either quickly carries off the patient, or is not resolved till after a very long time. This division therefore of pleurisies into dry and moist, is of use in forming a just prognosis.

A P H. DCCCLXXVII.

THERE is no part of the internal coverings of the thorax which this disease does not seize; therefore the whole pleura, and the

Aph. 877. Of a PLEURISY. 3
the mediastinum are equally affected by it; and consequently the anterior, posterior, right and left, the interior, exterior, and deeper parts, but more especially the sides.

We come now to review the parts affected in a pleurisy. All the symptoms shew that there is a violent inflammation in this malady; but physicians are not all agreed in what parts the inflammation is seated. But as there is a very near affinity betwixt a pleurisy and a peripneumony, so they often arise from the same causes. Both diseases are attended with a cough, and a pleurisy is near as often relieved by a spitting from the lungs. A peripneumony often accompanies a severe pleurisy, or almost constantly follows it; physicians therefore of great eminence have been of opinion, that the same parts, namely, the lungs, were affected in both these disorders. Sydenham acknowledges this affinity, but assigns a distinct seat to each of these diseases.

Hoffman was of opinion, that a spurious pleurisy seized the external parts of the breast only; but that if it seized the surface of the membranous substance of the lungs, like an erysipelas, it then constituted a true pleurisy. This opinion has been embraced by the learned *Triller*, in an elegant treatise that he has written on a pleurisy.—Certain we are, that the pleura only is not constantly the seat of a pleurisy; for it may be seated in the fat and intercostal muscles; and indeed in every part of the body where there are arterial net-works, or where lymphatic arteries arise, a phlegmon may be formed. See Aph. 373.

Peter Servius, who dissected the bodies of 300 persons who died of pleurisies at *Rome*, always found one lobe of the lungs corrupted and distended with putrid matter; but the pleura appeared not at all affected, or at most but slightly disordered. Indeed if we consider that a pleurisy and a peripneumony are often conjoined, and that it is not from the pleurisy

only that the patient dies, nor because the intercostal parts are inflamed, but oftener because the immense pain suppresses the necessary motions of the thorax, whereby the course of the blood through the lungs is stopped, and this brings on a fatal peripneumony. For this reason the disease will be rather constantly found in the lungs; while the pleura appears but slightly affected: for it is observable, that Servius does not deny the pleura to be affected, but only confines it to a small degree. However, we are confirmed by a great number of observations, that the pleura is truly affected in this disease. See Cæl. Aurelianus^a, Diemerbrock^b, and the observation writers.

From what has been advanced, it may be concluded, that the true seat of this disorder is in the pleura, the adipose membrane contiguous to it, and in the incumbent muscles, but that the lungs also may be affected by stifling the respiration, and thus be inflamed; but then this inflammation is altogether distinct from that of the pleurisy. Nor is the cough any objection to this, (though some eminent physicians have thought it to arise only from the lungs being affected;) for when the intercostal parts are swelled by an inflammation, they may press and irritate the contiguous lungs so as to produce a cough; or even the respiration itself being impeded by the severity of the pain, may excite a cough. Thus in gravid women, the uterus, by pressing upward the abdominal viscera, and obstructing the free motion of the diaphragm, we sometimes meet with a very troublesome cough. An irritation of the internal nares, or a rough touching of the membrane which lines the meatus auditorius, may also excite a cough. If therefore a cough may be excited by irritation of parts so distant from the lungs, much more may be expected from an irritation of parts inflamed, and actually contiguous to them.

^a Acut. Morb. lib. ii. pag. 117. ^b Anatom. p. 309.

I have observed pleurifies seated throughout the whole extent of this membrane; which is also confirmed by authors of the best repute; but most frequently of all, the sides are seized with this malady; for which reason Aurelianus concludes, that the disease took its name from that part of the body which it principally invades. This observation ought to be remembered, because the ignorant people imagine there is no pleurisy if there be no pain in the side, and that the left side only is subject to this disease. But I have found the right side oftener affected than the left; and the learned *Triller* has made the same remark; and also assures us, that a pleurisy which attacks the right side is not so dangerous and obstinate as when the left side is affected.

A P H. DCCCLXXVIII.

BUT when the membrane which invests the ribs externally is the seat of the disorder, or even in the internal intercostal muscles, it is called a *true* pleurisy; but if the intercostal muscles, especially the external, or those lying above them are affected, it is then called a *spurious*, or *bastard* pleurisy.

There are pains of the side, attended with a fever, which though they affect the respiration, are yet not so dangerous in their events, and these have given rise to the distinction of a pleurisy into *true* and *spurious*. The principal difference between these two lies here, that the vital respiration is so much the more impeded, the more inward the disease is seated; and that a suppuration following an inflammation, seated in the exterior parts, has a tendency to discharge itself outward; whereas if the malady is more deeply seated, it tends to break into the cavity of the thorax. Galen has observed this, and mentioned the

signs by which these two kindred diseases may be distinguished one from the other^a.

A P H. DCCCLXXIX.

A Pleurisy chiefly invades those who have done growing, and are of a sanguine habit; those who eat and drink freely, or use violent exercises, or are seldom troubled with acid eructations, and easily fall into inflammatory disorders: it principally invades in the spring, especially when the weather suddenly comes in very hot, after a preceding sharp frost; or in the winter, after a sharp cold wind, and then it is called an *idiopathic* or original *pleurisy*.

We learn from faithful observations, that every age and constitution is not equally subject to this disease; and that even the different seasons of the year, and changes of the weather, have some share in producing it.

Seldom troubled with acid eructations.] This is an observation taken from the aphorisms of Hippocrates^b, who says, “that those who have acid eructations are seldom troubled with pleurisies.” When we treated of spontaneous diseases arising from an acid humour, at Aph. 60, & seq. we demonstrated, that the want of good blood, and a weakness of the fibres, vessels, and viscera, with a neglect of animal motion, are justly reckoned among the causes of an acid acrimony, and therefore such constitutions are the least disposed to inflammatory diseases.

Principally invades in the spring.] A pleurisy may indeed arise in all seasons of the year, from the causes hereafter to be enumerated; but when the disease rages epidemically, it is chiefly in the spring.

^a De Locis Affectis. lib. v. cap. 3. ^b Sect. 6. Aph. 33.

Aph. 880, &c. Of a PLEURISY.

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Or in the winter, after, &c.] That the particles of the blood may be congealed by cold, was demonstrated at Aph. 117. If then a very cold wind is continually drawn into the lungs, which lie contiguous to the pleura, and at the same time affects the whole body, the intercostal parts, both within and without, will be exposed to severe cold.

It is called an idiopathic, &c.] Namely, when the cause of the pleurisy resides in the intercostal parts from the first attack of the disease, and is not first formed in some other part of the body, and afterwards translated to the sides.

A P H. DCCCLXXX.

BUT a pleurisy arising from the matter of some preceding inflammatory disease, put into motion, and translated to the parts enumerated at Aph. 877, and 878, is called a symptomatic pleurisy.

This distinction of a pleurisy into idiopathic and symptomatic, is of considerable use in the cure. For an idiopathic pleurisy requires copious, and often repeated bleeding; but in a symptomatic, following some epidemical disease, which will not bear venesection, at least to be repeated, blood is to be taken more sparingly than usual. Sydenham discovered this by diligent observation, and proposes it to others as a matter of great moment in practice.

A P H. DCCCLXXXI.

A Pleurisy has for its antecedent cause,
1. Every thing capable of producing an inflammation of any kind. (Aph. 375 to 380.)
2. Whatever determines this general cause to

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the

the pleura more particularly, such as the patient's constitution, a narrowness and rigidity of the intercostal arteries; a preceding disease, that leaves a disposition to this disorder, such as a scirrhus, or callus of the pleura, an adhesion of it to the lungs; the nature of the prevailing epidemical distemper; a cold air conveyed forcibly through narrow clefts upon the naked body, previously heated by exercise, or the heat of a fire; the sudden drinking of cold liquors when the body is overheated; a very cold, frosty, northern air in the winter. 3. A translocation of an inflammatory, ichorous, or purulent matter, that was before predominant in the whole body, or in some particular part, and then from any cause deposited on the side, as in the measles, small-pox, vomicas, large and broad ulcers suddenly disappearing, the matter thereof being absorbed by the veins.

2. Whatever determines this general cause to, &c.] Although there may be an inflammatory diathesis in the blood, yet another cause is required to fix the disease rather upon the intercostal parts, than upon any other, such as the make of the patient, &c. For anatomists have observed a very great variety in the size and number of the same blood-vessels in different subjects, and that sometimes the arteries are found callous, cartilaginous, and even bony. The same defects may likewise happen in the intercostal arteries, so as to hinder the free motion of the blood through them. However it seems probable that this cause very rarely happens, as indurations of the arteries are found only in the larger trunks, and in decrepid old age.

A preceding disease, &c.] That a scirrhus hardness often remains after violent inflammations in glandular

glandular parts, was shewn before at Aph. 392; and we also remarked, in treating of a scirrhus, what wonderful indurations have been observed in membranous parts of the body; but as the inflamed lungs often adhere to the pleura, it will be no wonder if the same happen from an inflammation of the pleura. Hence those who have had a severe pleurisy, are often ever after troubled with pains of the breast, upon sudden changes of the air, violent passions of the mind, hard drinking, &c. and this more especially if they have been seized with a pleurisy more than once.—But Diemerbrock observes, that those whose lungs adhere to the pleura are more subject to pleurisy than others; and experience has taught physicians, that those who have had a pleurisy once, are easily invaded with it a second time.

The nature of the prevailing epidemical, &c.] Although pleurisy often arise from evident causes, yet faithful observations have taught us, that there are epidemic pleurisy, which seize a great many people who inhabit one place, although there is no apparent cause to which the origin of the disease can be ascribed. It is therefore evident that the epidemical constitution ought to be considered as a cause in pleurisy.

A cold air, &c.] When one is heated by exercise, or by the heat of a great fire, the skin appears very red, which shews that the red blood then enters many of the smaller vessels, from which it naturally ought to be excluded. See Aph. 118. If now the vessels are suddenly constricted by a cold air, and the particles of the blood thickened, those grosser fluids, which were driven into the extremities of the smaller vessels, will there adhere, and form obstructions, inflammations, and all their consequences. Pleurisy, as well as gouts and rheumatism, frequently arise from this cause.

But a cold air is of all the most mischievous, when it blows forcibly upon the naked body through some small

small aperture, because the action of the cold is thus rendered so much the greater upon the body.

Drinking of cold liquors, &c.] There is even more danger from this cause, than from a cold air. I never observed pleurifies more severe, or suddenly fatal, than from excessive drinking of cold liquors, when the body has been much heated. Examples of this kind are almost innumerable, and the reason is pretty evident; for the blood of a healthy person, drawn from a vein into cold water, concretes almost instantly into threads of a solid substance. Now when plenty of cold drink is swallowed down the œsophagus, which descends in its course very near the trunks of the intercostal arteries, it is therewith distended, instantly imparts the unusual coldness thereof to the adjacent diaphragm, liver, spleen, &c. It is no wonder therefore that a fatal pleurisy or peripneumony should so frequently arise from this cause, or that inflammatory disorders, should from thence invade the other viscera contiguous to the stomach.

A very cold, frosty, &c.] Concerning this cause of a pleurisy, see Aph. 879.

3. A translation of an inflammatory, &c.] What has been advanced under the two preceding aphorisms, relates to the causes of an *idiopathic* or original pleurisy, we now are to treat of a symptomatic or incidental pleurisy.—All diseases which change from their first nature into another kind, are said to be made by a *translation*. Thus there is often an inflammatory disposition introduced into the blood in continual fevers, by which afterwards the respiration becomes difficult, quick, or short, and painful about the vitals. Sometimes also the phlogistic matter will remove from the part upon which it first settled, and fix itself upon the intercostal spaces. Thus sometimes a phrenitis is solved by a pain in the breast, as we have already observed in another place. 779.

A P H. DCCCLXXXII.

THIS history of a pleurisy, and the progress of it hereafter to be explained, and the dissections of bodies plainly shew, that it is an inflammation of the blood in the small arteries of the parts described at Aph. 877 and 878, and generally arising from an acute fever preceding.

A P H. DCCCLXXXIII.

FROM what has been said in the two preceding aphorisms, the history of this disease is plainly derived; for it frequently begins while the appetite for food is great; with a coldness, horror, weakness, weariness, and a fever; it proceeds with a heat that insensibly rises to a degree of burning; with thirst, and a total loss of appetite; the pain, as yet, tolerable or mild, gradually increases, and at length becomes extremely severe, with a most difficult respiration. At its height there is a violent fever, though less manifest, the respiration being checked, and almost stifled by the patient, to avoid the intense pain. In this state the physician is often shamefully mistaken: after this the disease has various terminations, which depend upon many causes, more especially upon the different changes of the inflammation, the nature of the part affected (Aph. 877, 878.) and a consideration of each particular circumstance; for as there are a greater number of parts affected at once; as the impetus of the circulating fluid is more violent; or as the malignity

lignity of the primary disease is greater, so much the more violent are all the symptoms; especially the more the breathing and pulse, together with the excretions, recede from their natural condition.

Now follows a description of a pleurisy from its phenomena, both a little before it attacks the patient, when it is yet forming, and likewise throughout all the stages of the disease, the knowledge of all which fixes the diagnosis of the distemper. A pleurisy is sometimes preceded with an uncommon appetite, though as yet no symptom of the malady is perceived; but soon after, the patient begins to grow cold, his strength fails, and all the symptoms which usually attend the beginning of a fever advance, although, as yet, there is no apparent sign of a pleurisy. However, a pain soon after seizes one side or the other, sometimes the back, or the fore part of the breast, and all those parts enumerated at Aph. 877. Yet there is no certain time when the pain follows the forementioned symptoms; for it is sometimes sooner, and sometimes later. I have sometimes remarked the pain to be very acute within an hour after the first attack of the disease: on the contrary, in the vernal pleurisy of the year 1729, the pain came upon the second day of the disease; and although it was not very severe, all that were seized with it were in great danger. The urine was thick, like that of cattle, from the beginning of the disease, the pulse became wavering, soon after followed a delirium, a rattling in the throat, and then death. Now although the pain, when it is very sharp, denotes great danger, and demands speedy relief; yet we are not to be over confident, although there be little pain at first: for I have seen a pleuritic patient, who had only a slight pain the first day, perish on the fourth of a gangrene, although every proper means had been applied.

Hippocrates

Hippocrates seems to have observed pleurifies of the same kind^a.

When the pain once seizes the patient, the breathing becomes very difficult; for at the time of inspiration the ribs must of necessity be drawn asunder, and the inflamed parts extended so as to increase the pain. Upon this account the patient hardly breathes air sufficient to dilate the lungs, whereby the right ventricle of the heart becomes unable to empty itself so freely as it ought. The blood therefore returning from the head by the jugular veins, cannot now find admittance into the right sinus and auricle, already full; whence the internal parts of the encephalon are compressed, the patient becomes dull, stupid, and less sensible of pain; the lungs are gradually more and more filled with blood, and he soon expires suffocated, while the unskilful, hearing no more complaints from the patient, imagine that the disease abates. See Aph. 807. It is likewise to be here remarked, that pleuritic patients perish in the height of the disease, not from the inflammation of the pleura, nor of the parts incumbent on the ribs, but are suffocated by an oppilation of the lungs, for want of a free respiration.

Has various terminations, &c.] That is, may be terminated by a mild resolution, or by a suppuration, or a gangrene. See Aph. 386, & seq. & 492.

The nature of the part affected.] For if the external parts of the chest only are affected, the danger is less; but the contrary when the disorder is more deeply seated. At the same time it is evident, that a pleurisy is so much the worse, the more it extends into the parts enumerated at Aph. 877 & 878.

As the impetus of the circulating fluid is, &c.] What disorders may arise from an increased circulation of the humours, has been declared at Aph. 92, & seq.

^a De Morbis. lib. 3. & Coac. Prænot. Or

Or as the malignity of the primary disease, &c.] For a fever is a constant companion of a pleurisy, and as the fever injures a greater number of the functions, as it sooner exhausts the vital powers, and as it is attended with worse symptoms, so much the more dangerous will the pleurisy be. See Aph. 734.

The more the breathing and pulse, &c.] For on these life depends, for which reason they are usually called *vital actions*, but the disease naturally affects the breathing, and the magnitude of the disease is justly estimated from the greater or lesser impediment the breathing suffers from it.

Excretions.] Namely, those of urine and stool, but more especially the spitting, of which we shall treat particularly at Aph. 901.

A P H. DCCCLXXXIV.

A Pleurisy therefore terminates either in health, in other diseases, or in death.

A P H. DCCCLXXXV.

IT terminates in health, either by the assistance of nature, or of art, in the beginning, while it is as yet simple.

It is cured by nature when the fever is moderate; or, if it is too intense, art endeavours by blood-letting and other remedies, (Aph. 610) to lessen the violence of the fever; but as this natural cure succeeds best in relaxed habits, therefore art endeavours, by fomentations, liniments, &c. to relax the vessels of the painful side, that they may more easily yield to the impelled fluids, and thereby afford the obstructed matter in the arteries, a free passage into the veins. But when a pleurisy has continued three or four days without the assistance of art, it seldom or never is cured

Aph. 886, &c. Of a PLEURISY. 15
cured by a mild resolution, but then the violence of the disease gives rise to other maladies, as will hereafter appear.

A P H. DCCCLXXXVI.

IT is cured by the assistance of nature, either by a mild resolution, or by a concoction and excretion of the matter of the disease.

See what has been said on this subject at Aph. 594.

A P H. DCCCLXXXVII.

IT is cured by resolution, if the humours are mild, their motion regular, the obstructing cause not obstinate, and the obstruction small; for now the lenity of the symptoms shews that nothing is necessary to be done, but to alleviate the disorder by a thin, light diet, by the mildest aperients, and by emollient fomentations.

Forms for all these purposes may be seen in the *Materia Medica*, under the present aphorism.

A P H. DCCCLXXXVIII.

IT is likewise cured by a concoction and excretion of the morbid cause. 1. By a discharge of blood from the hæmorrhoidal vessels, in a sufficient quantity, and at a seasonable time. 2. By a copious discharge of a thick urine, evacuated with a kind of strangury, and reddish with a white sediment, before the fourth day, and relieving all the symptoms. This kind of urine has also cured a dry pleurisy. 3. By a
copious

copious discharge of a yellow bilious matter by stool, to the relief of the patient, before the fourth day. 4. By abscesses behind the ears, or upon the legs, appearing before the 6th day, and running for a long time, whether they be ichorous, purulent, or fistulous. See Aph. 837, to 843. 5. By a translation of the pain of the side to the shoulder, arm, or back, with a numbness, pain, or heaviness in these parts. 6. By a free and copious spitting, which affords relief, and does not arise from a defluxion; this at first resembles pus, and soon after becomes white, appearing before the fourth day. If such a spitting continues, or quickly returns again, upon being suppressed, the patient recovers either on the ninth or eleventh day.

1. We come now to consider those ways by which a pleurisy is cured with the assistance of nature by a concoction and excretion of its cause.—We are taught by numerous observations that the material cause of a disease may change its place, and suddenly invade other parts of the body. I have seen such a translation of the pleuritic matter towards the head, the pain of the side then wholly ceasing; but the head being set at liberty, the pleurisy has returned to its first seat. Triller remarks that pleuritic patients generally escape by the assistance of nature, even without bleeding, if a copious flux of florid or purple blood happens from the nose, between the first and the fifth day.

The same advantages may be justly expected from a like discharge of blood by the hæmorrhoidal vessels, as Triller has also remarked: but perhaps this is a discharge seldom met with, at least I have known none who have had the disease resolved by this flux; yet Hippocrates observes, “ that those who have the
“ piles

"piles are neither seized with a pleurisy or peripneumony."

2. Hippocrates says, "that a pale reddish urine, with a light sediment in pleurisy denotes a sure crisis." If such a urine flows plentifully, and deposits this kind of sediment, with an abatement of all the symptoms, we are then certain, that the matter of the disease is discharging itself, and still more certain, if this happens in the beginning; but if it happen late in the distemper, it seldom goes off by urine only.

3. What this matter is, and why it is called bilious, see Aph. 830, No. 1. Aræteus has observed, that a flux from the bowels is sometimes salutary in a pleurisy. However, it must also be remarked that sometimes in the beginning of pleurisy there is a symptomatical diarrhæa, which is prejudicial, and often dangerous, as it does not in the least relieve the symptoms of the pleurisy. Triller condemns this diarrhæa as dangerous, and often fatal; but that it frequently proves salutary, when the more violent symptoms have abated, he confirms by observations both of his own and others.

4. See what has been said of these abscesses at Aph. 837 and seq.

5. See what has been said of translocations in the history of a phrensy at Aph. 779, and in the history of a quinsy at Aph. 809.

But when the pain invades the back, shoulder, or arm, while that of the pleuritic side evidently abates, it is a very happy prognostic; for I have not seen one pleuritic patient die, when the metastasis was made to those parts. Triller remarked the same from his own observations. It is perhaps worth observing

* I saw myself a pleurisy terminated by the piles, in a strong robust man, who had at times been subject to this disorder. The discharge was promoted by emollient fomentes, and the application of leeches to the anus. This was in the year 1738; but I have not met with the like case since.

that *these critical pains happen ofteneſt upon the ſixth day*; at leaſt I have found it thus in pleuritic patients that have been committed to my care. However, this metaſtaſis does not cure the diſeaſe, but is rather the forerunner of a ſalutary criſis. But there may poſſibly be other ſalutary metaſtaſes in pleuriſies of particular epidemical conſtitutions. Baglivi obſerves, that in the hoſpitals of Italy, all pleuritic patients recovered, who were ſeized with a pain in the internal ear, followed afterwards with an abſceſs, and a diſcharge of matter; more eſpecially at Rome.

6. By a free and copious ſpitting, &c.] We have already ſhewn the importance of a ſpitting in diſeaſes of the breaſt, when we treated of a peripneumony, which is often happily cured by this evacuation; and the like good effect is obſerved from a ſpitting in a pleuriſy. But it is not every ſpitting that relieves a pleuriſy, we muſt therefore inquire what ſort of ſpitting it is, by which this diſtemper is cured. It muſt be free and copious, and at the ſame time leſſen the pain and other ſymptoms; for we then know that it likewise leſſens the cauſe of the pleuriſy. It muſt not ariſe from a coryza or deſluxion, for if either of theſe diſorders attend, there is frequently a very copious diſcharge by ſpitting, but ſuch as gives no relief to the material cauſe of the pleuriſy, and only evacuates the catarrhus mucus.—It muſt alſo at firſt reſemble pus, and ſoon after become white. I have often known this white, concocted, or pus-like ſpitting cure a pleuriſy; and even in a woman advanced into the ſixth month of her pregnancy, tho' Hippocrates abſolutely pronounces a pleuriſy fatal to women with child. However, it is in general true, that a pleuriſy happening to pregnant women, is always more dangerous.

Again, not only this white, or concocted expectoration, but alſo a yellow one mixed with a little blood, is ſalutary in this diſorder; and I have ſometimes obſerved a tough ſpitting tinged of a reddiſh
 III colour

colour with blood, equally serviceable in the beginning. Hippocrates affirms that, "Those are the mildest pleurisy in which the spitting is somewhat bloody," and says, that they generally come to a crisis about the ninth or tenth day. In this case, bleeding must be avoided; for it stops the expectoration, and kills the patient.

A P H. DCCCLXXXIX.

WHEN it appears by the signs enumerated at Aph. 875, that there is a pleurisy, and that it is in the state described in the preceeding Aphorism, then the physician is to make no alteration in the disease, but suffer every thing to remain as it is. Therefore neither venesection, nor evacuation, nor any other change, ought to be attempted. But the patient must now, 1. be kept to a light, soft and thin diet; the body is to be kept quiet, and the mind calm; the air is to be moderately warm and moist; natural sleep should be indulged, or procured by the use of gentle narcoticks; and the most emollient, diluent, and gentle aperient medicines are to be directed. 2. We must next have regard to each particular evacuation, and promote that which relieves the disease. Thus, when there is an evacuation of blood from the hæmorrhoidal veins, the anus is to be fomented with an emollient, relaxing, and aperient foment, and if a discharge does not follow, leeches are to be applied to the part. Aph. 888. No. 1. When there is a copious discharge of thick urine, evacuated with a kind of strangury before the fourth day, fomentations of the like kind are to be ap-

plied to the region of the kidneys, to the perinaeum, and to the hypogastrium; gentle aperient diuretics are to be exhibited; the air of the chamber is to be kept cool; sweating and other evacuations are to be avoided; but mild diuretic clysters are beneficial. Aph. 888, No. 2. But when there is a discharge of yellow bilious stools, which afford relief, before the fourth day, the like fomentations are to be applied to the abdomen; laxative clysters are to be injected; and a laxative diet to be prescribed. Aph. 888, No. 3. When ichorous, purulent, or fistulous abscesses appear behind the ears, or upon the legs before the sixth day, (Aph. 888, No. 4,) while the part affected is at the same time discovered, then we are to follow the methods directed at Aph. 859 to 861; and when an opening is once made, it is to be kept from closing for some time by the use of suppuratives. Again, in case of a translation of the pain of the side to the shoulder, arm, or back, Aph. 888, No. 5, besides the common remedies, the parts into which the pain removes, are to be fomented with warm emollient decoctions, to be rubbed, and stimulated with gentle drawing plaisters. Lastly, when there is a salutary spitting, Aph. 888, No. 6, the whole method of cure ought to be the same as in a mild peripneumony. See Aph. 850, and 851.

A P H. DCCCXC.

BUT a pleurisy is cured by art, without any disease remaining after it, chiefly by the following method. If the pleurisy before the
end.

end of the third day, appears to be great from the violence of the symptoms, if it is of the dry kind, and the patient of a robust and dry constitution, inured to labour, without hopes or signs of a mild resolution, or a concoction and excretion of the morbid matter; then, 1. Without further delay, a large quantity of blood is to be taken from a large vein, in a quick running stream, from a large orifice, the patient lying on his back and at rest; and while the blood flows, let the respiration be quickened by coughing and sighing, and at the same time the affected side fomented and gently rubbed; this bleeding is to be continued until the pain is considerably abated, or until the patient begins to faint; and is to be repeated as often as the return of the symptoms require; but when the buff or fizy crust disappears, bleeding is then to be omitted. 2. Immediately after bleeding, fomentations, bathings, warm steams, liniments, and plaisters are to be applied, in order to relax, resolve, mitigate, and avert the pain. 3. At the same time, such medicines are to be given, as dilute, resolve, relax, moderate, cool, abate, or ease the pain, which, being drank warm, and in large quantities, and determined towards the part affected, are very beneficial. These may be varied according to the change of the symptoms, always remembering to chuse those remedies which most powerfully resist putrefaction. 4. A thin, soft, cooling and antiphlogistic diet, is here necessary. 5. Lastly, every thing that is drying, heating, or increases the force of the circulation, such as hot air, the heat

heat of the sun, fire, bed, heating diet and medicines, is to be avoided.

2. In the *Materia Medica* there is the form of a fomentation and liniment proper in this case.

3. We treated of these alterants in the cure of a peripneumony at Aph. 854. No. 3.—A simple decoction of barley, with oxymel and nitre, is often sufficient here, as it contains all the qualities necessary for the cure: for it dilutes by being watery, relaxes by its mealiness; and honey and vinegar, with the nitre, dissolve the inflammatory size, and lessen the too great heat. In the *Materia Medica* there are other forms given which answer the same purposes.

A P H. DCCCXCI.

WHICH remedies, and how long they are to be continued or repeated, we learn from the obstinacy of the disease, its remission, or change into a state of health, Aph. 888.

We have now seen how a pleurisy may terminate in health by the kind assistance of nature, and besides this we have also shewn how it may be cured by art, without leaving any other distemper after it.—It now follows that we consider a pleurisy when it changes into other diseases, or terminates in death; and at the same time also to point out what art can effect in curing those maladies which unhappily arise from an ill-treated pleurisy.

A P H. DCCCXCII.

A Pleurisy terminates in other diseases, 1. When the inflamed part suppurates, which is known from the general signs of a suppuration, enumerated

enumerated at Aph. 387, and 402. From the obstinacy of the pain, cough, and fever beyond the fourth day. From the absence of those signs which denote a resolution, Aph. 887, or an entire cure Aph. 888; and from a neglect of the means directed at Aph 890.

General signs of a suppuration.] Of these we before treated, at the Aphorisms cited in the text.

From the obstinacy of the pain, &c.] For the pain, cough, and fever are symptoms that attend every pleurisy; and by the severity of these we judge of the violence of the disease. If therefore, these symptoms continue obstinate, without any remission, the inflammatory matter will be so impacted into the narrow extremities of the arteries, in which it adheres, as to render it hardly possible to carry off the disease by a suppuration only. But we must remark, that a suppuration is then only certain, when all these symptoms continue in the same degree during the whole period of the disease, or are rather increased than diminished. For it often happens, that all the symptoms abate by blood-letting and other remedies, and soon after, or on the next day, return with equal or greater violence, even after the fourth day; but we are not from hence to conclude that the pleurisy is undoubtedly tending to a suppuration. All practical physicians know the truth of this, and the histories of pleurisies given us by Triller confirm it.

From the absence of those signs which, &c.] For when these signs are absent, we are sure that the inflammatory matter is still impacted in the vessels, and therefore a suppuration is to be feared. But sometimes in obstinate pleurisies, the parts inflamed do not form an abscess, altho' there are neither signs of resolution, nor of critical excretions. Such cases I have seen; and the history of *Anaxian*, given by Hippocrates, makes it sufficiently evident.

From a neglect of the means directed at Aph. 890.] Namely, a neglect of bleeding, which is so necessary in a violent pleurisy.

A P H. DCCCXCIII.

BUT that an imposthume is now forming, we know from the general signs enumerated at Aph. 405, but here especially from an horror or shuddering often returning without an apparent cause, from the symptoms enumerated in a peripneumony at Aph. 834, 835, and from the duration of the disease. Hence also, it is known, when an imposthume is actually formed, which sometimes is even evacuated by spitting from the lungs.

An abscess here formed has all the signs common to other suppurations formed in the external parts of the body, but most of these signs cannot here be perceived, as the abscess lies concealed. It is therefore a matter of importance to collect all the other signs which shew that a suppuration is here formed. Shudderings or horrors which return at no certain period, are signs of great moment, see Aph. 834. The duration of the disease, but with less violent symptoms than at the beginning, is likewise of great importance; for if all the symptoms remain equally severe, or even increase, then a gangrene or death are rather to be expected than a mild suppuration, which, altho' here extremely dangerous, is yet much better than those worst kinds of terminating a pleurisy by a gangrene, or by death. Hippocrates in treating of a pleurisy observed the same, and says, "Those who are not cured by the 7th, 9th or 11th day, have a suppuration: however it is better for them

"them to have a suppuration, for it is less dangerous, altho' very tedious, and difficult to cure."

Besides *Morton* and *Baglivi* have observed, that when an inflammation of the pleura, or tubercles of the lungs, suppurate, the fever that was at first continual is changed into an intermittent, either quotidian or tertian. These are the symptoms by which we know that an abscess is forming, and if they continue a long time, we may be assured that the suppuration is now compleated. But there are other concomitant signs which confirm this diagnosis, such as a pain of the side, difficult breathing, dry cough, thirst, pains about the clavicle and scapula, all which were observed by Hippocrates.

But sometimes the matter here formed is happily evacuated by spittings from the lungs, as we are assured from undoubted observations; and I believe there is no physician of considerable practice, that has not seen a suppurated pleurisy go off this way.

A P H. DCCCXCIV.

BUT this abscess is sometimes broken by the weight of its own matter, which drops into the cavities of the breast, and new matter being formed and collected by the ulcer, at length fills the whole cavity, and makes a consumption of the whole body. That this is the case, we know from the signs enumerated in the two preceding Aphorisms, from the continuance of the disease to the 14th day, from the sudden remission of the symptoms, and from their quick return; hence a true Phthisis, or pulmonary consumption.

* De Morbis, lib. 3. Affectionib.

* De Morbis lib. 2. & de Intern.

An abscess thus formed, and turgid with pus, breaks sooner or later, if it be not carried off by some other outlets, which yet rarely happens, but through the lungs. Aretaeus indeed seems to have been of opinion, that the matter of an abscess formed in a pleurisy, might be discharged by the intestines, and the patient recover; but he, in another place, mentions a discharge of the pus, both by stool and urine. Galen and others have observed vomicae evacuated by the same passages.

Unless therefore, the matter here collected is carried off by these outlets, or deposited by a metastasis upon other parts, the abscess breaking, pours out its contents into the cavity of the thorax, and there creates more or less uneasiness, in proportion to the quantity that fills the cavity. But the abscess thus broke, pours out daily more new matter, by which means there is often a great quantity collected in the thorax. The celebrated Boerhaave was once greatly surprized to meet with a case of this kind in a country lad, who had been afflicted with a pleurisy in the harvest-time from drinking of cold liquors. By neglecting the disease, a suppuration ensued, and in a month after the patient expired. Upon opening the abdomen, the diaphragm was thrust downward on the affected side, so as to form a large bag that projected beyond the navel, and upon perforating this bag, there flowed out above 12 pounds of matter.

Hippocrates has accurately collected the diagnostic signs which precede a suppuration; and the rupture of an abscess; and also remarks, that the time of this rupture is uncertain; being sometimes sooner, and sometimes later. These are his words, "Those who have suppurations from a pleurisy or peripneumony, are troubled with flushings, which are slight in the day-time, but more violent at night. They expectorate little, sweat about the neck and breast;

Lib. 1. cap. x. b. ib. cap. ix.

“their eyes appear hollow, but their cheeks are
 “flushed. As the disease grows worse, the ends of
 “the fingers turn hot and rough, the nails grow
 “crooked and cold, the ancles swell, pustules break
 “out over the body, and they have an aversion to
 “food. These are the signs which attend long con-
 “tinued suppurations. But those which break in a
 “short time are known by the signs which come
 “afterwards, from the pains in the beginning, and
 “likewise from the difficulty of breathing. Most
 “of these suppurations break, some on the 20th day,
 “others on the 40th, and others on the 60th. In
 “those who have the pain in the beginning
 “more violent, and the breath more difficult, with
 “a cough and spitting, you may expect the abscess
 “to break by the 20th day or sooner. But in such
 “as have these symptoms more slight, it will be
 “longer in breaking; but then you must compute
 “from the first attack of the disease, or from the
 “time that the fever, or the shuddering was per-
 “ceived. But there must of necessity be some pain,
 “difficulty of breathing, and spitting, before the
 “rupture of the abscess.”

That a Phthisis may arise from matter collected in
 the cavity of the thorax, no one doubts.

A. P. H. DCCCXCV.

WHEN therefore we know by the signs enu-
 merated at Aph. 892 and 893, that the
 part inflamed is suppurated, the place where the
 pain was being carefully marked, is to be opened
 or eaten through with a caustic quite to the pleura,
 and kept open by suppurating medicines, that
 the matter being pressed outwards by the expan-
 sion of the lungs, may avoid the pleura, and

Coac. Pronotion.

prevent

prevent an empyema; then the part is to be softened, until it is quite cleansed.

A P H. DCCCXCVI.

BUT if it appears by the signs enumerated at Aph 302 and 894, that the abscess being broke, has by its matter formed an empyema; then the thorax is immediately to be opened, the matter discharged, and the wound to be healed by proper diet and medicines. Aph. 304.

Although we read of extraordinary cases, in the writers of observations, where pus absorbed from the cavity of the breast, has been carried off by stool or urine, yet it would be very unsafe to delay the cure in expectation of this event; for unless the pus here collected be speedily evacuated it will produce a fatal phthisis. See Aph. 303, and what hereafter is declared, in treating of an empyema. But as the thinner parts of the collected matter in the cavity of the breast, may be absorbed by the bibulous veins, and infect the whole mass of blood with a purulent cacochymy, such remedies are to be given in diet as most powerfully resist putrefaction. See Aph 599, and 605, No. 2, and at the same time decoctions of the rad. bardan. chin. and sarsaparilla, with infusions of agrimony, betony, golden rod, &c. are to be given to wash out the absorbed purulency by sweat or urine.

A P H. DCCCXCVII.

A Pleurisy terminates also in another disease, when the part affected becomes scirrhus, or callous; or when the lungs adhere to the pleura; which, when it happens, there ariseth an asthma

Aph. 898, &c. Of a PLEURISY. 29

asthma, dyspnœa, and dry cough, especially after eating, or exercise. From these signs, this termination of a pleurisy is known, without those of an abscess, Aph. 893, or an empyema, 896, especially if they continue a long time without any great increase of the disorder.

Of all the particulars in this aphorism, we have treated at Aph. 843.

A P H. DCCCXCVIII.

THE above disorder is either absolutely incurable, or can only be removed by abstemious living, by labour, by a free air, and dwelling in the country, with hard riding, continued long and frequently used. See Aph. 862.

A P H. DCCCXCIX.

AN inflammation of the pleura also terminates in a gangrene, first of the side, and afterwards of the lungs, by reason of their vicinity to the pleura.

A P H. DCCCC.

THIS gangrene arises either from the violence of the pleurisy, or from the acrid or putrid matter, likewise which attends it. See Aph. 388.

A P H. DCCCCI.

THAT a gangrene of the lungs will happen, and is already begun, may be presaged by various

various symptoms; thus, if the spitting be purulent, and somewhat bilious, and round; if purulent and mixed with some streaks of blood, or of a footy-black colour, or muddy and fetid; if there be a great rattling in the breast, with a sorrowful countenance, the eyes appearing red and yellow, dusty, or dim; or if the spitting be from the beginning of various colours, the patient then often dies on the third or fifth day. If there be a stertor, without a spitting, or with one that is difficult, if the pulse be languid, and the urine flame-coloured; if there be a symptomatic looseness with thin, fetid, putrid stools; if a violent peripneumony comes after the pleurisy, or if there be a new attack of the pleurisy. If upon opening a vein the blood appears very florid without the inflammatory crust, although it be taken from a large orifice, in a full stream, and received in a clean vessel. If the spitting be suppressed, while the dyspnoea remains, or increases with the pain and oppression of the breast, a hard, small, quick pulse, and great heat; for all these symptoms growing worse on the fifth day, prove fatal upon the seventh. If the urine be very red, dark, with a sediment of various colours, that does not distinctly separate, the disease kills within 14 days; but if the sediment be black or furfuraceous, it proves fatal sooner. If the pleurisy be mild in the beginning, but becomes violent on the fifth or sixth day; the danger is great on the seventh and 12th; and seldom is cured till after the 14th day. If the back, the side, and the shoulder, appear hot and red with great anguish, while there

there is a very fetid and greenish flux from the bowels.

The physician ought to be acquainted with all those signs which presage so dangerous a termination of a pleurisy, that he may both be able to apply all the assistances of art, and guard his own reputation by foretelling the consequence.—The signs in this aphorism are collected from Hippocrates, and shew either the violence of the disease, the weakness of the vital powers, or the degeneration of the humours from their healthy condition,—or that the material cause of the disease will be with great difficulty concocted and subdued.

If the spitting be purulent, bilious, &c.] Why these spitings are condemned by Hippocrates, we before explained at Aph. 883, No. 3, and at Aph. 848.

Purulent, and mixed with, &c.] Such a purulent spitting, indeed, denotes that the matter of the disease is subdued; but when it is at the same time somewhat bloody, it denotes that the vessels are either corroded or ruptured, which is accounted a bad sign; and if the spitting appears of a sooty-black colour, and fetid, there is then no doubt but that a gangrene is present. See also what has been said of brown, muddy, &c. spitings at Aph. 848.

A great rattling in the breast, &c.] What this rattling in the breast denotes, has been declared at Aph. 848. But as anatomical injections have taught us, that the eyes receive blood vessels from a branch of the internal carotid, we know that when they appear red and yellowish the finer vessels of the encephalon are obstructed, which, for this reason, is always a dangerous sign in acute diseases. Hippocrates has particularly condemned these signs in pleuritic patients, and says, that they all die, who have a rattling in the breast, a sorrowful countenance, or the

the eyes appearing yellow and red, or dim. Coac.
Prænotion.

If the spitting be of various colours.] Galen observes that spittings in pleuritic and peripneumonic disorders have some resemblance to the sediment in the urine. If therefore the spittings are various, they denote a difficult concoction of the morbid matter. See Aph. 893.

If there be a stertor without a spitting, &c.] For this shews that the lungs are more and more filled, and that nothing escapes by the trachea, which might relieve the oppressed lungs.

If the pulse be languid.] We do not mean here that weakness of the pulse which follows repeated bleeding, when the pleuritic pain abates, and the respiration becomes easier; but that which attends while the pleurisy is still violent, and which arises from the lungs being stuffed up with gross blood, and thereby impeding a free respiration.

Urine flame-coloured.] Because this is a sign of internal heat. See Aph. 673.

If there be a symptomatic looseness, &c.] For this shews that the humours tend to putrefaction, and it was before remarked at Aph. 388, that an acrid disposition of the juices disposes an inflammation to turn to a gangrene.

If a violent Peripneumony comes after, the, &c.] In a pleurisy the patient can hardly breathe for the severity of the pain, whence the lungs not being sufficiently dilated are soon filled with viscid blood, and thus a peripneumony may follow a violent pleurisy. I have frequently observed a kind of slight peripneumony, while the matter of a pleurisy now concocted, was endeavouring to discharge itself by spitting; for this reason the text says, if a *violent peripneumony* comes upon a pleurisy, it must be fatal, a peripneumony being of itself a very dangerous disease; and when it supervenes a pleurisy, must be, in the last degree, fatal.

A new

A new attack of the pleurisy.] All who are acquainted with practice, know that the pain in a pleurisy will often abate after bleeding, and sometimes even wholly cease; and yet, in a few hours after, it will return and require another bleeding, but yet a gangrene is not immediately to be presaged from this return of the pain, because many recover after several such abatements and returns of the pain. It means only here a greater degree of pain added to a less, by a sudden increase of the violence of the disease, or while the first pain continues, another seizes the opposite side of the thorax, which I have frequently observed.

If upon opening a vein, the blood appears florid, &c.] This is a practical observation communicated by *Baglivi*, who had it from the celebrated *Lancisi*. In this case *Baglivi* advises to refrain from bleeding, at least from a repetition of it.

If the spitting be suppressed, while, &c.] A dry pleurisy is always dangerous, a suppression of the spitting must therefore be a bad sign. The spitting indeed, ceases when the matter of the disease is evacuated; but if the dyspnoea continues or increases, with a sense of fulness in the breast, it is evident that the spitting does not cease for want of matter, but from the retention of it in the lungs, which, in a short time may suffocate the patient; especially if there be a small pulse. But if the pulse is also at the same time both quick and hard, with intense heat, there is then danger that the inflammation will in a short time end in a gangrene.

All these symptoms growing worse on the 5th day, prove fatal, &c.] If a suppression of the spitting happens on the 5th day, with an increase of all the bad symptoms above mentioned, the patient dies upon the 7th, being the next critical day of the disease, and the most remarkable of any, as we have proved at large in the comment to Aph. 741.

If the urine be very red, dark, &c.] For healthy urine slowly evaporated through all the degrees of heat, turns to a high red colour, and therefore such a urine denotes an imperviousness of the humours, a dissipation of the watery parts, and a great degree of acrimony inclining to a putrid state, with a violent febrile motion. See Aph 388. But a black urine denotes a gangrenous disposition of the humours, which is still of more dangerous import: yet *Hollerius* affirms that he has seen violent pleurisy terminated by copious thick and black urines^a.

If the pleurisy be mild in the beginning, but, &c.] See what has been said upon this presage in the comment to Aph. 883.

If the back, the side, and the shoulder, &c.] It was observed at Aph. 888, No. 5. that a translation of the pain of the side to the shoulder, arm, and back, was a salutary sign, but then the pleuritic pain abates, and the respiration becomes easier. In the present case, there is the greatest anxiety, therefore the matter of the disease is not translated to parts more safe, but the inflammation is spread, while the original disease still remains, which is a very bad sign.

A P H. DCCCCI. Part 2.

BUT if the pleurisy be of the dry kind from a want of strength, or from the severity of the pain, or from the unsuitness of the matter to be expectorated; or from too great a contraction and dryness of the vessels, or from the use of too hot medicines, the pain, at the same time tending towards the superior parts: If the tongue appears immediately dry, covered with fordes, of a livid or blackish colour, with a black blister or bubble upon it. If any or all of these signs appear together, the disease is generally in itself

^a In Comment. in Coac. Prænot. page 1047.

fatal,

Aph. 902, &c. Of a PLEURISY. 35
fatal, or not to be cured but with great difficulty.

A pleurisy is dry either from a deficiency of matter, or because it cannot be expectorated from the patient's weakness, or from the severity of the pain; either of which denote the worst state of the disease; and for the most part destroys the patient by a gangrene of the part either in the side, or in the lungs contiguous to it.

A P H. DCCCCII.

BUT when it appears from the signs enumerated at Aph. 901, that a gangrene is impending, then the most powerful remedies are immediately to be used; nor must we rely upon the strength of nature, or trust to slighter remedies, provided the strength of the patient is not wholly exhausted.

A P H. DCCCCIII.

THEREFORE, in this case, deep eschars are to be raised in the affected part with the actual cautery; then let them be dressed with the strongest mundifiers, and be continually kept warm with the most penetrating fomentations, and let the patient besides take large quantities of strong diluent, aperient, antiseptic and sudorific drinks; for by these means, if by any, the severity of the disorder may be mitigated.

When a gangrene impends, or is already begun, there are no hopes of a mild resolution, nor of any critical evacuation; the most we can expect is, that by a suppuration the crude inflammatory matter may be converted into pus. When a gangrene seizes an external part, these parts melt into a putrid filth, un-

til the part is perfectly cleansed. Unless therefore all endeavours are made to discharge this gangrenous filth, it will putrify the adjacent parts. For this reason deep eschars made by the actual cautery are here directed, that the heat and vital powers of the parts now suppressed, may be restored again. The ancient physicians attempted the cure of many diseases by the actual cautery, and sometimes they used it also to hasten a recovery in such diseases as were curable, though slowly, without it. But I do not remember to have read that Hippocrates directed this remedy in a pleurisy, where a gangrene was threatened. See the method of cure proper in this case in the history of a gangrene at Aph. 419. In the *Materia Medica*, there is an antiseptic decoction here necessary, but the quantity of the oxymel of squills is too large, or probably it is a mistake, and should be oxymel simplex.

A P H. DCCCCIV.

BUT if the violence of the inflammatory cause, excites the most severe pleuritic symptoms, which can neither be removed by the efforts of nature (Aph. 887, 888,) nor by any antipleuritic remedy (890, 903;) and if these symptoms afterwards cease suddenly without any apparent cause (so far as they depended upon the inflammation,) the pulse remaining small, quick, and intermitting, the breathing also quick and short, with a cold sweat, it is certain, that a gangrene has seized the inflamed parts. Hence a delirium soon follows; and shortly after the patient expires, especially if the thorax is at the same time, livid: the event is the same, if the patient, who expectorates a kind of yellowish spit,

spit, is suddenly relieved of his pain without any apparent cause; for then also a fatal delirium soon appears, a presage of death, from the gangrene.

A P H. DCCCCV.

A Pleurisy terminates in death, when the causes of it are so violent, that the pain suppressing the motion of the thorax soon produces a mortal peripneumony, by stopping the circulation of the blood through the lungs.

For if the severity of the pain prevents the dilatation of the thorax, the blood is then accumulated in the pulmonary artery, and only the thinner parts are transmitted to the veins, while the grosser are collected together, hence a speedy suffocation.

A P H. DCCCCVI.

FROM what has been said, the reason is obvious, why a peripneumony follows every severe pleurisy. Why it is generally fatal to old people, to child-bed and pregnant women, and why swathing the thorax with a bandage so much relieves the pain as to render the disease supportable.

To child-bed women.] For when puerperal women are seized with violent fevers the lochial flux is commonly suppressed. An unhappy case of this kind I saw in a gravid woman, seized with a violent pleurisy about 24 hours before her delivery: She brought forth a dead child, and soon after the lochia stopped. The pain was somewhat abated after bleeding, but immediately after returned again with greater severity;

city; and tho' by repeated bleedings the pleurisy was a little relieved, yet the fever continued equally acute, the lungs began to obstruct and on the 7th day she expired. But it appears from many observations, that a pleurisy is not always nor absolutely fatal in puerperal women.

And pregnant women.] Because the acute fever which attends this disease threatens an abortion, and the sudden depletion of the vessels by repeated venesections are not so safe in pregnant women. Besides, the abdomen being greatly distended, the breathing becomes very difficult, as the diaphragm can descend but a small space, and therefore, a greater dilatation of the thorax is required.

Why swathing the thorax, with, &c.] When we breathe, the ribs are drawn from each other, and the diaphragm being pressed downward, the capacity of the thorax is enlarged. But in a pleurisy the ribs cannot be drawn one from the other without extreme pain. When the thorax is so bound up by rollers as to render the ribs immoveable, while the abdomen is free from any compressure, then the dilatation of the thorax in breathing is performed by the diaphragm alone, without stretching the intercostal parts. But it must be observed, that the pain is only abated by this means, without any removal of its cause.

Of a PARAPHRENITIS.

A P H. DCCCCVII.

IF a disease like that of a pleurisy seizes that part of the pleura which surrounds the diaphragm, or affects the diaphragm itself, there ariseth a dreadful disease, which physicians have called a *Paraphrenitis*.

In

In the history of a pleurisy it was said at Aph. 877, what a number of parts this disease might invade, as the pleura lines all the internal surface of the thorax, and therefore an inflammation of the diaphragm which divides the thorax from the abdomen, should properly belong to a pleurisy. Yet custom has given this disease a particular name, and on account of some difference in the symptoms, physicians have treated of it separately.

A P H. DCCCCVIII.

THIS disease is far more frequent than is generally believed, altho' when present it is often either undiscovered, or neglected, or else treated under the title of another disease.

That a great variety of symptoms may arise in this disorder, will be evident enough to one who knows the structure and situation of the diaphragm; but the principal, and most universal signs are enumerated in the following aphorism.

A P H. DCCCCIX.

A Paraphrenitis is known by a most acute continual fever; by an inflammatory pain of the affected part, intolerable on account of its nervous membranes: This pain is greatly increased upon inspiration, coughing, sneezing, and upon a full stomach; as also by reaching, vomiting, compressing the abdomen in discharging the faces, or urine; hence the breathing becomes high, small, quick, and suffocating, being performed only by the action of the thorax, while the abdomen remains at rest; there is also a perpetual delirium; the hypo-

chondria are drawn inwards; the risus Sardonius, or convulsive laughter attends, with a convulsion in other parts; a madness; and at last, a gangrene.

It was demonstrated before at Aph. 382, that a fever attends every inflammation, and that the fever is the more violent, the more irritable the inflamed parts are. But the greatest irritation of all is intense membranes. Hence we may easily conceive what a dreadful disease an inflammation of the diaphragm must be, when it is always in a state of tension, even when it exerts no action. No wonder then that the pain should be greatly increased when the inflamed diaphragm is agitated by coughing, sneezing, &c.

But the breathing is here much more difficult than in a pleurisy, in which the thorax may be retained immoveable by bandage, and respiration performed by the motion of the abdomen and contraction of the diaphragm only. But in a paraphrenitis the miserable patient uses his utmost efforts to elevate and draw from each other the superior ribs, that the breast may dilate, and the respiration be still continued; from hence arises that high, small, and quick respiration, attended with a sense of suffocation.

Another symptom of this disorder is a constant delirium, as Hippocrates and Galen have observed, and every practitioner after them has confirmed. Nay Galen asserts that no other part of the body creates a constant delirium but the diaphragm, and observes that the difficult respiration here distinguishes this disease from an original phrensy; but observations evince that membranous parts which are very tense and inflamed, after they have excited the most severe pains, produce the worst kind of deliriums, as whitloes, &c.

The hypochondria are drawn inward, because the patient, to avoid the extremity of pain, uses all his endeavours to hinder the diaphragm from descending

Aph. 910, &c. Of a PARAPHRENITIS. 41

ing at the time of inspiration; but by this attempt, the liver, stomach, and spleen are more, as it were, buried under the ribs, or within the hypochondria, and Galen accounts this retraction of the hypochondria as a pathognomick sign of a paraphrenitis.

From all that has been said, it is apparent, that an inflammation of the diaphragm, as a part that is always tense, and in motion, may suddenly terminate in a gangrene, and then before the patient expires, convulsions and ravings frequently happen.—As to the risus Sardonius, it has always been accounted from the earliest observations a pathognomonic sign of a paraphrenitis.

A P H. DCCCCX.

A Paraphrenitis terminates in the same manner as a pleurisy (Aph. 884, 892, &c.) but, on account of the great and incessant motion of the part, its necessity to life, and the tensility of its nervous membranes, all the events are quicker and more fatal; hence also a purulent ascites.

A P H. DCCCCXI.

THEREFORE the cure of a paraphrenitis requires the same distinctions and cautions, and almost the same remedies, which were before directed for a pleurisy, excepting such as the situation of the part will not admit of. But emollient clysters, as they extend near to parts affected, are often beneficial.

Fomentations, liniments, and plasters, are here of less use than in a pleurisy, because they cannot be so nearly applied to the parts affected. But as clysters

sters may extend thro' the whole length of the colon, even to the end of the ilium, they may be here very useful; because the colon lies very near to the diaphragm, and therefore clysters will have all the effects of a forus.

A P H. DCCCCXII.

BUT when the inflamed diaphragm afterwards suppurates, and the abscess breaking, pours out its matter into the cavity of the abdomen, it is there collected, and turning putrid, produces a humour, an erosion of the viscera, a most dreadful wasting, and at last death.

A P H. DCCCCXIII.

THIS disease, however well known, is absolutely incurable.

Of an HEPATITIS, and the several kinds of JAUNDICE.

A P H. DCCCCXIV.

AS the viscera and parts we have been treating of, are subject to inflammations, so is the liver also, although it be rarely suspected, and perhaps does not often happen, on account of the smallness of the hepatic artery, and the slow motion of the blood through the vena portarum.

As the arteries that go to the liver are but small in proportion to the size of so considerable a viscus, and

as the blood circulated thro' the liver from the trunk of the *vena portarum*, moves on but very slowly, as it does in the veins, having now no further assistance from the moving powers of the heart and arteries; on these accounts, probably, a true inflammation of the liver is not so frequent as in other parts; but very stubborn and obstinate obstructions are therefore much oftener formed in this tender gland. Some eminent physicians, and among them Dr. *Frederic Hoffman*, have affirmed that a phlegmon of the liver is one of the most uncommon diseases. But practical observations assure us, that abscesses of the liver are often found in opening of dead bodies, which prove that an inflammation must have been there before.

A P H. DCCCCXV.

AN Hepatitis, is therefore seated in the ultimate extremities of the *vena portarum*, or *hepatic artery*, which convey blood to the liver in the same manner, and with the same effects, as arteries; so that this inflammation of the liver like that of the lungs is two-fold as to its seat and origin, yet so that the one produces the other.

We observed at Aph. 119, and 371, that an inflammation can take place only in conical vessels; it is therefore evident an hepatitis may arise in the branches of the *vena portarum*, as well as in those of the *hepatic artery*. But it deserves to be remarked, that an inflammation in the liver from an obstruction in the *vena portarum*, or in the ends of the *hepatic artery*, will have very different effects from an inflammation seated in the pulmonary or bronchial arteries; for all the effects arising from the blood urging upon the inflamed part, do not so plainly shew themselves when the disease is seated in the branches of the *vena portarum*,

portarum, as when it is seated either in the pulmonary or bronchial arteries; for this reason physicians are often mistaken in their diagnosis of this distemper. See Aph. 381, 382.

A P H. DCCCCXVI.

BOTH these inflammations of the liver are preceded by the like causes, namely, the general causes of all inflammations determined chiefly to these parts, but there are other causes peculiar to this part; such as an exorbitant fatness of the omentum, an atrabiliary state of the blood, or bile; the acrimony of a stagnant, purulent, ichorous, or scorbutic matter; especially if to these are added heat, a fever, motion, diet, medicine, or poison, which dissolve, move, or direct them towards the liver; a fat, sharp, adust bile, put into motion by its proper causes; a stone, a chalky matter, a schirrhus, callus, steatoma, abscess, cancer, or worm; obstructing, straitening, or compressing, any part of the liver, gall-bladder, or biliary ducts, if there be any of the above exciting causes, or any of the following; such as sudden and intense cold applied to the liver by the air, drinks, bathing, or swimming, after the liver has been much heated; great thirst long endured after violent exercise, heat and sweating; an ardent fever with fasting, and want of diluting drinks; great perturbations of mind; violent commotions excited by vomits; and hypochondriacal affections of long standing.

[Fatness of the omentum.] The omentum in infants is as thin as the finest silk, while it includes no fat in its

its folds; it has also the same very fine texture in adults, but in lean people inclined to be fat, it may grow to an immense bulk; for the greater part of the bulk of the protuberant belly proceeds from the fat of the omentum. But the large size of the omentum may compress all the adjacent viscera; and the danger will be still greater, when the stagnant fat is put into motion by violent exercise, or by a fever, and mixes with the circulating humours. For as the omentum has no excretory vessel, the liquified fat must pass directly through the epiploic veins into the *vena portarum*, and therefore the liver will be suddenly over-charged with an oily fat, which passes with great difficulty through the extremities of the smallest vessels, and may produce the most obstinate obstructions. See Aph. 693.

[An atrabiliary state of the blood, &c.] Such a state of the humours is said to be present, when the more fluid parts of the blood being dissipated, the earthy parts unite with the thick oils, and produce in the blood a kind of pitch-like tenacity, by which it is more apt to stick in the extremities of the vessels. See more on this subject in the history of a melancholy at Aph. 1098.

[The acrimony of a stagnant, purulent, &c.] When we treated on a peripneumony, it was remarked, that it was sometimes cured by a critical deposition of the matter, either upon the upper or lower parts of the body; and that when it tended towards the lower parts, Hippocrates had observed signs of a slight inflammation in the hypochondria. But sometimes this purulent matter is collected in the liver, and afterwards produces a vomica. See Aph. 841. Hollerius tells us, that he twice or thrice observed intolerable pains in the calves of the legs in a fever, that would yield to no remedies; but the patient dying, upon dissecting the legs, there was found a white, smooth, and equal matter diffused through the cellular membrane, and in the liver there were also found purulent

ab-

abscesses^a. Schenkius has given us this and several other observations of the like kind^b.

[Poison.] There are many poisons which suddenly fuse the humours, and also move them very violently. Such are the very acrid metalline preparations, as the *mercurius sublimat. corrosivus*, &c. which may suddenly solve the atrabiliary matter collected in the abdominal vessels, and drive the same into the vessels of the liver, so as to produce an hepatitis; and perhaps there are poisons which disturb the functions of the liver, rather than those of other parts.

[A fat, sharp, and adust bile, &c.] The bile, which is the most acrid of all the humours, when it inclines to putrefaction, may excite the most acute fevers. But this is more particularly true of the cystic bile, which is retarded in its exit, both by the situation of the gall-bladder, and by the narrowness and crooked course of its duct, and is therefore easily accumulated. But the cystic bile has still a more easy way into the liver, as appears from experiments^c. Hence frequently in the autumn, after sultry heats, bilious fevers arise, that are often attended with an hepatitis, or inflammation of the liver.

[A stone, a chalky matter, &c.] Whatever hinders a free circulation of the humours through the vessels, either by compressing or obstructing them was ranked among the causes of inflammation; no wonder then that stones, or chalky matter, scirrhi, &c. should produce the same effects in the liver, by hindering the free course of the blood through the *vena portarum*, or by stopping the passage of the bile already secreted. We are next to consider the chief causes, by which the blood is stopped in the ultimate extremities of the *vena portarum*, and these are,

[Sudden and intense cold applied to, &c.] When we treated of obstruction at Aph. 117, it was de-

^a Holler. in Coac. Hippoc. p. 348.

^c Herm. Boerh. Institut. §. 348.

^b Lib. iii. p. 411.

monstrated,

monstrated, that cold so unites the particles of the blood, as to render them unfit to pass freely through the ultimate extremities of the vessels; and it also appeared, that the danger was still greater when this intense cold affects the body, after being heated by violent exercise, &c. Add to this, the drinking of large draughts of cold liquors, swimming in cold water when the body is heated by labour, &c. For this reason Arctæus ranks a sudden cooling of the body among the causes of an Hepatitis.

Great thirst long endured, &c.] For thus the more fluid parts of the humours are dissipated, without any supply of a diluting vehicle to the blood, whose particles therefore unite, and become too bulky to pass through the extremities of converging vessels. But from this cause, the most fatal disorders may arise in all parts of the body, but more especially in the liver, because here the venal blood is obliged to flow through vessels as straight as arteries, without the impulse of the heart and lungs.

An ardent fever, &c.] For in an ardent fever the whole body is dry, and as it were burnt up. See Aph. 738, 739.

Great perturbations of mind.] For every function of the body may be disturbed only by a change of our thoughts or ideas. See Aph. 104. But sudden fear, or great grief, produce the most violent effects of this kind.

Violent commotions excited by vomits.] When we treated of febrile vomitings at Aph. 652, it was observed, that these happen when the diaphragm is suddenly and strongly drawn downward, while at the same time the abdominal muscles being contracted, compress all the contained viscera, by which means the stomach is strongly compressed, as if it were between two presses. In this case, the motion of the venal blood in the abdominal viscera is accelerated, and therefore will flow with greater impetus through the vena portarum; but if the vessels in the liver are
pervious

pervious, and the blood passable, no great hurt can arise from this accelerated motion. But if an atrabiliary matter, put into motion by the shocks of vomiting, should suddenly be determined towards the liver; or if that tender viscus be previously weakened by chronical diseases, very bad disorders frequently arise from such a quick motion of the blood through the vena portarum, as a fatal hypercatharsis, a vomiting of blood, &c.

Hypochondriacal affections, &c.] When the more moveable parts of our humours are by any cause exhausted, the grosser and less moveable will cohere closer to each other, and produce that ill state of the blood which physicians call atrabiliary. See more of this at Aph. 1098.

A P H. DCCCCXVII.

AN inflammation of the liver, arising from so many different causes (916,) has various effects, according to the different state, or antecedent disposition of the liver itself, or the different nature of the moved and inflamed matter; and lastly, according to the diversity of the moving cause.

For if the liver was before scirrhus, or stuffed with stony concretions, the hepatitis will be more difficult to cure; but if the substance of the liver is already corrupted, by a malignant or cancerous ulcer, the consequences will be still worse. If the fat of the omentum be suddenly dissolved, and moved to the liver, the worse kind of inflammation may arise; but if an atrabiliary matter, now become acrid, be driven to the liver, so as to produce an hepatitis, there can be no hopes left.

According to the diversity of the moving cause.] Thus, if the inflammation seizes the ends of the hepatic

patic arteries, the effects of the inflammation will be quicker than when it invades the ends of the vena portarum, through which the blood moves much slower. It is also evident, that if the hepatitis is attended with a violent fever, there will be more reason to fear a fatal event, since to resolve an inflammation requires a sedate motion of the humours. (See Aph. 336.)

A P H. DCCCCXVIII.

BUT while it follows the common course of inflammations, it obstructs the small vessels, stops the fluids, raises a tumour, compresses the adjacent parts, and produces in them all the disorders of the parts; then the inflammation gradually increases, until it has almost affected the whole liver; it compresses the stomach, and when it is full, occasions a pain both in the liver and diaphragm: it hinders the course of the blood in the cæliac and the two mesenteric arteries, and stops it at the liver; and consequently wholly obstructs the circulation of all the venal, arterial, and lymphatic fluids through the principal viscera of the abdomen; it prevents the generation, separation, excretion, circulation, and action of the bile; produces a jaundice and all its effects, a putrefaction of all the fluids, and even of the abdominal viscera; whence an infinity of evils.

In this aphorism are enumerated the effects which follow an inflammation of the liver, as a cause; and which also give the diagnosis of an hepatitis. But in what manner these effects are produced, was explained in the history of an inflammation at Aph. 382. From thence also we may easily conceive, that the small vessels, stuffed and turgent with impervious humours,

humours, will so compress and straighten those which are contiguous to them, as to spread the inflammation, at first confined to a small part, throughout the whole extent of the liver.

But as a large portion of the liver lies resting upon the stomach, it must of course press upon the stomach, when it is enlarged by a violent inflammation; and the stomach, when it is distended with food, must in like manner press upon the inflamed liver, and thus increase all the complaints. The same also holds true with respect to the diaphragm, which is contiguous to the convex part of the liver. For this reason Galen reckons a lost appetite, sickness, and vomiting among the signs of an hepatitis or inflammation in the concave part of the liver; but if it is seated in the convex part of the liver, then there will be a greater pain in breathing, that reaches sometimes as high as the throat, and is likewise attended with a cough. But all these symptoms appear only when the whole body of the liver is inflamed, or at least the greater part of it.

A P H. DCCCCXIX.

An hepatitis also terminates, either in health, in other diseases, or in death.

See what has been said at Aph. 591.

A P H. DCCCCXX.

IT terminates in health, either by the help of nature, or of art.

See Aph. 885.

III A P H.

A P H. DCCCCXXI.

BY the help of nature an hepatitis is solved, either by a mild resolution, or by a concoction and excretion of the morbid matter.

See what has been said on the cure of a pleurisy at Aph. 886.

A P H. DCCCCXXII.

IT is carried off by resolution, if the matter be recent, mild, and has all the conditions enumerated at Aph. 386; but art likewise promotes the cure, by diluting, resolving, and gently moving the obstructing matter, by the use of epithems, drinks, and clysters.

When it appears from the mildness of the symptoms, that the disease may be carried off by a mild resolution, then art is only to supply plenty of diluting drinks, with such remedies, which, without increasing the circulatory motion of the blood, are proper to dissolve the matter impacted in the narrow extremities of the hepatic vessels; such are fresh whey, thin broths, in which the leaves of lettuce, borragé, or bugloss, or the roots of scozonera have been boiled; the rob of currants, elder-berries, and the like, with sal polychrest, nitre, tartar vitriolatum, &c. But such remedies are to be directed which strongly resist putrefaction, and which are at the same time emollient; as a mild state of the humours is always necessary to effect a cure by resolution. Gentle frictions of the hypochondria, especially of the right, will be also useful, after diluents and resolvents have been first used; for thus the mat-

ter beginning to be resolved in the liver, will be moved forward, and the obstructed vessels set at liberty. An epithem proper in this case may be seen in the *Materia Medica* at Aph. 890. N°. 2. Clysters are also here equally beneficial, as they are a kind of focus to the liver while they remain in the colon. We often meet with a kind of slight hepatitis in autumnal fevers, in which the face looks of a waxen colour, the urine is bilious, with a slight yellowness in the whites of the eyes, especially in the external angles, which is happily cured by the above method.

A P H. DCCCCXXIII.

AN hepatitis is cured by a concoction and excretion of the morbid matter, 1. By a bilious diarrhæa intermixed with a little blood before the fourth day. 2. By a copious discharge of an acrid, thick, red urine, with a whitish sediment, before the fourth day, and continuing for a long time. 3. By a slight pain about the spleen before the signs of concoction. 4. By a large hæmorrhage from the right nostril. 5. By sweats, beneficial as to their matter, place, time, continuation, and effects.

1. It was shewn at Aph. 830, that a Peripneumony is cured by a concoction and excretion of the morbid matter. An hepatitis may be cured in the like manner; for when the inflammatory matter is once resolved, and rendered moveable, it may then

* In the fevers of this autumn 1772, I have frequently met with this kind of hepatitis attended with an oppression of the præcordia, great heat and thirst, anxiety and languor, which yielded at last to the method of cure here directed.

find

find an easy and short passage by the porus biliaris into the duodenum, and be afterwards discharged by stool. But this flux from the bowels ought to appear before the fourth Day; for if the disease holds out longer, there is no room to hope that it will terminate in health, without changing into some other disease, and perhaps into an abscess.

2. As inflammatory matter resolved in the liver may commodiously pass into the intestines by the porus biliaris, and be evacuated by stool; so may the same matter pass from the obstructed extremities of the vena portarum into the cava, and thus mixing with the circulating humours, may be expelled the body by urine. See what has been said of this salutary discharge at Aph. 594, and 830.

3. We learn from physiology that all the blood of the spleen passes by the vena splenica into the liver, the liver therefore being obstructed, the free course of the blood through the spleen will at last be hindered. But this slight pain in the spleen is of no benefit to the disease, but only serves as a sign, to shew that the obstructed vessels of the liver begin to be set at liberty. We sometimes observe a like kind of pain about the spleen, when the liver becomes scirrhus, and often in an obstinate jaundice. A tightness about the hypochondria is likewise a sign of a critical hæmorrhage from the nose; as was observed at Aph. 741.

4. By a large hæmorrhage from, &c.] See what has been said on hæmorrhages from the nose at Aph. 741. Nor is this hæmorrhage only serviceable by lessening the quantity of blood, for it gives much more relief than any other evacuation of blood made by art. I lately observed this in a pleuritic patient, who after five venesections, scarce found any relief; but by a copious flux of black blood from his nostrils, the fever quickly abated, and all the symptoms relieved.

6. By Sweats, &c.] We have already treated of critical sweats in the comment to Aph. 594. N^o. 2. where we have considered all the particulars mentioned in this aphorism.

A P H. DCCCCXXIV.

WHEN the first of these critical discharges, that is, a bilious diarrhæa, appears, those remedies ought to be administered, which dilute, resolve, move, absterge, and gently expel the morbid matter, but chiefly such as resist a bilious putrefaction, both in the form of epithems, clysters, fomentations, drinks, diet, and medicines.

Whey is one of the best remedies in this case, and may be made still more efficacious by boiling in it some of the lactescent plants, such as the *sonchus*, *endivia*, *cichoreum*, the roots of *scorzonera*, whose virtues in resolving a febrile viscid we before commended at Aph. 614. But as a putrefaction of the humours is greatly to be feared, acceſcent remedies are to be given, in order to obviate the bad consequences of this evil. Tamarinds, rob of elder-berries, currants, and the syrup of citron-juice, and the like, are usually given here to advantage. Forms of this kind may be seen in the *Materia Medica*, under the present aphorism.

A P H. DCCCCXXV.

IF the matter of the disease inclines to go off by urine, we must then use the means directed at Aph. 888. N^o. 2. adding to these such remedies as are a little deterſive.

A P H.

A P H. DCCCCXXVI.

IF there be a sense of pain about the hypochondrium, the method directed at Aph. 924, and 925, is to be pursued; but at the same time, the like fomentations are to be applied to the spleen, and the whole space betwixt that and the liver.

Since the pain in the spleen is only a sign that the matter obstructing the liver is now rendered moveable, it plainly appears, that nothing more is required than what was before directed.

A P H. DCCCCXXVII.

IF there be an hæmorrhage from the nose, the nostrils are to be fomented, both internally and externally, with warm emollient decoctions, until blood enough has been discharged to alleviate the symptoms; but if the hæmorrhage should be too profuse, it must be gradually stopped by styptics, and a proper diet; but this must not be attempted too hastily.

An hæmorrhage from the nose usually lessens all the symptoms, and it is seldom that any danger attends a profuse flux of blood; for so soon as the patient faints, the open arteries in the nostrils immediately contract, and the hæmorrhage ceases. But if the blood flows after the patient faints, it ought then to be stopped, and not otherwise. In what manner, and by what remedies this is to be done, may be seen in the comment to Aph. 743. Forms of styptics are given in the Materia Medica under the present aphorism.

A P H. DCCCCXXVIII.

FINALLY, if the matter of the disease goes off by critical sweats, a plentiful use of diluting and abstergent apozems are necessary.

Critical sweats of this kind are to be kept up by diluting drinks; but the heating sudorifics, as they increase the motion of the humours, are not to be trusted: Whey drank hot, and in a warm bed, will sufficiently promote such critical sweats, and at the same time supply the blood with fluid parts.

A P H. DCCCCXXIX.

DURING these critical discharges, (from Aph. 924 to 929,) particular care must be taken, that none of the morbid matter remains in the part affected, as it will afterwards be difficult to remove: and thus the first and mildest species of the jaundice is cured.

Obstructions formed in the liver may be resolved by the use of the resolvent medicines before directed, when the fever is moderate; but if the patient refuses further help when the disease is going off, or the physician neglects to remove the remains of it, chronical disorders then usually ensue, which prove extremely difficult to cure, particularly scirrhus indurations of the liver. Autumnal epidemic fevers, among other symptoms, are often attended with a slight hepatitis, which, if it be not thoroughly resolved, the patient lives in a languishing unhealthy state, with a pale fallow countenance.

A P H. DCCCCXXX.

IF the hepatitis be recent, violent, and without the signs and hopes of a resolution, or concoction and excretion of the morbid matter, it must then be treated with the same cautions, the same remedies, and in the same method as a pleurisy (890,) or a paraphrenitis (911,) and the like disorders; only here, cooling and gently opening apozems, which promote the excretion by stools, either drank, or injected by clyster.

In the Materia Medica, under the present aphorism, there are formulas of medicines, which are in this case beneficial.

A P H. DCCCCXXXI.

BUT the signs of a complete cure are, when the yellowness is intirely gone out of the eyes, face, urine, and stools, and when the symptoms enumerated at Aph. 918. cease.

If at the same time no oppression is felt about the right hypochondrium, especially after eating, or unusual exercise, we may be then assured that the hepatitis is completely cured.

A P H. DCCCCXXXII.

HENCE we are led into a knowledge of the origin, nature, effects, and cure of the second and more severe kind of jaundice.

Boerhaave here distinguishes the several kinds of jaundices, according to the diversity of their causes; yet the same name is given to the disease, although a very different method of cure is required.

A P H. DCCCCXXXIII.

BUT if, in an inflammation of the liver, the remedies directed at Aph. 922, to 931, are not, or are applied too late, or without effect; if the cause of the inflammation be more violent, then there will follow a suppuration of the liver as in other parts; but here, from the large quantity of stagnant liquids, either bloody or bilious, laudable pus is seldom formed, but in small abscesses, and on the external surface; so that generally a fatal putrefaction of this viscus ensues.

Whoever understands the structure of the liver, will easily perceive that suppurations here are more dangerous than in other parts of the body.

A P H. DCCCCXXXIV.

THAT a suppuration will follow, is known,
 1. By the signs of a preceding inflammation in the part, with an inflammatory pain, a yellow colour in the eyes, skin, urine, and faeces, and by an acute fever. 2. By the absence of a resolution and excretion of the concocted matter, or from a neglect in the cure. 3. By a change of the symptoms, a remission of the acute pain, followed with a beating or throbbing, while the jaundice still continues, with vague and uncertain shiverings.

A P H.

A P H. DCCCCXXXV.

THAT a suppuration is formed, we know,
 1. By the signs enumerated in the preceding aphorism. 2. From a swelling in the region of the liver. 3. From a change of the symptoms, for instead of pain, there is now a sense of weight or uneasiness in the part, the jaundice still remaining. 5. From the great weakness of the patient, an hectic fever, and great thirst.

1. This diagnostic is self-apparent,
 2. We are taught by anatomy what a large space of the abdomen the liver takes up, and therefore a swelling may shew itself in divers parts of the hypochondrium. For unless the vomica shews itself outwardly, it is not easily discoverable to the senses. If it is seated in the concave part of the liver, it is evident enough that it cannot be easily distinguished, except it be of considerable bulk. Besides, it is possible that the gall-bladder distended with bile, and projecting its bottom below the margin of the ribs, may be mistaken for a vomica. The celebrated Petit confesses, that he was once deceived in this case, and had cut through the integuments before he perceived his error.

The diagnostic signs by which a tumour of the gall-bladder may be distinguished from an abscess of the liver, are, 1. A throbbing pain during the suppuration, attended with vague shiverings, that invade at no certain time, and are also of long continuance. 2. The tumour formed by an abscess has not so uniform a figure, nor is there at first such an apparent fluctuation, which is perceptible only in the centre of the tumour, the circumference being as yet hard.

3. See

3. See Aph. 387, and 405, where we treated of the change of symptoms, when an inflammation is tending to an abscess.

4. When we treated of weakness in fevers at Aph. 661, it was remarked, that a great and sudden weakness frequently attends, when putrid matter is lodged about the præcordia. But as in the hepatitis there is always danger of a putrefaction, and laudable pus hardly ever formed, the reason is evident, why great weakness usually attends an abscess of the liver. See Aph. 918 and 933.

The hectic fever, which usually attends all internal suppurations, we treated before at Aph. 835. But as a bilious oily acrimony, with putrid excrements lodged in the primæ viæ, may create a febrile thirst, the reason is evident why an unextinguishable thirst sometimes attends an hepatitis. For the same reason the appetite also is commonly quite destroyed. See Aph. 636.

A P H. DCCCCXXXVI.

THIS abscess, either 1. eats up the whole body of the liver; or, 2. breaks into the cavity of the abdomen; or, 3. makes a way through the biliary vessels into the intestines; or, 4. through the vena cava into the blood; or, 5. raising a tumour adheres to the peritonæum, and forms there an external abscess of the liver visible to the senses.

This aphorism enumerates the different events of an abscess of the liver.

A P H. DCCCCXXXVII.

WHEN the liver is consumed, the patient then languishes for a long time under a slow icteritious wasting, with a continual slight fever, intolerable thirst, great weakness, inexpressible anguish; the urine almost black, a tympany, a sanious and extremely fetid diarrhæa, till at length death puts an end to his misery.

The bad symptoms which attend the wasting of the liver by a purulent abscess, proceed partly from the resorbed pus producing a purulent cacochymy in the blood; and partly from the hindrance of those functions which depend upon a healthy state of this important viscus: for the quantity of collected matter increases daily, and by drawing and compressing the adjacent organs, may be productive of many evils. For this reason Aretæus, among other symptoms that attend a suppuration of the liver, mentions a sharp pain extending as high as the throat and top of the shoulder, because the diaphragm, and the pleura connected to it, are hereby greatly distracted. Besides, the matter being confined in a warm place, and shaken by the motion of respiration, is rendered thinner, more acrid, and more easily resorpt by the veins.

A P H. DCCCCXXXVIII.

BUT this case (937.) being so far advanced, admits of no cure, and hardly of any palliation; and this gives us the idea of another kind of jaundice.

A P H.

A P H. DCCCCXXXIX.

IF ulcers formed in the liver, break and discharge their matter into the cavity of the abdomen, they will continually add new matter to that already collected, convert all the fluids and the nourishment of the body into fresh pus, and all the viscera are corrupted, so as to create an ascites under the form of a tympany, and from this, death follows after a slow and terrible wasting, with all its symptoms. This kind of jaundice is like that described at Aph. 938, and curable by no manner of means.

A P H. DCCCCXL.

BUT when the suppurated matter and ichor, break through the extremities of the biliary ducts, and flow into their larger canals, and thence into the intestines, they will produce, as they happen to pass upwards or downwards, either fetid, putrid, purulent, ichorous, white, yellow, brown or black vomitings; or else the like kind of discharges by stool, with the greatest loss of strength, under the denomination of a colliquative diarrhœa, that will be soon fatal. Here again we have another termination of a jaundice, the most of all to be dreaded.

As the biliary ducts become gradually larger and at last terminate in one, called the hepatic duct, it is evident, that the purulent matter, as soon as it has entered these passages, may either get into the duodenum, and thence into the stomach, and be discharged by

by vomiting, or it may descend through the whole tract of the intestines, and be evacuated by stool.

A P H. DCCCCXLI.

BUT if the same liquids, that is, the purulent matter and ichor, corrode the extremities of the vena cava, and pass through them into the mass of blood, and mix therewith, the most dreadful symptoms arise, which soon prove fatal; such as enormous and frequent faintings, extreme weakness; the pulse in every respect bad; a general perturbation of all the functions at once; and sudden death. This is still another and different kind of jaundice.

If a large quantity of matter is this way suddenly mixed with the venal blood, it is the next moment circulated through the straight vessels of the lungs, where it may adhere, and occasion a sudden suffocation. But if, instead of good blood, an acrid ichor, or putrid sanies shall thus flow into the blood, and be circulated with it throughout the body, all the functions of the body must be disturbed; and the tender vessels of the lungs and encephalon destroyed. For if only an increased quantity of good chyle, suddenly mixing with the blood, can excite a fever, what mischiefs may we not expect from a corrupt ichor poured into the blood? But when the matter collected in the liver is slowly mixed with the blood, and is yet well conditioned, it may then be possibly carried off by urine, or else be translated to some less dangerous part.

A P H. DCCCCXLII.

IN this case (941.) no method of cure can be relied on; but a plentiful use of such means as support the strength, resist putrefaction, and supply the lost fluids, will be of some benefit.

It is evident, that in the present circumstances there is danger that the very worst consequences may follow when the blood is loaded with a purulent cacochymy; but still more, if the matter collected in the liver is already converted into a putrid sanies. In this case, the only indication is to wash out from the blood the corrupted matter, by large quantities of diluting and mild deterging liquors; to prevent the putrefaction, or correct it as much as possible. Whey boiled with sorrel; veal or chicken broth, with orange or citron juice, and a little old hock; panada, rice, or oatmeal gruel, are here preferable to all other remedies. The mineral acid spirits, especially those from sea-salt, and mineral waters are here likewise beneficial. Forms of medicines proper in this case are directed in the Materia Medica under the present aphorism.

A P H. DCCCCXLIII.

BUT if an abscess is formed externally (Aph. 936. N^o. 5.) the tumour properly secured, is to be opened either by burning of flax upon the part, by the actual cautery, by caustics, or by the lancet; and the wound is to be eroded so deep by the use of gentle escharotics and suppuratives, as to extend to the abscess itself.

An incision is evidently to be preferred to all the above methods.

A P H.

A P H.

A P H. DCCCCXLIV.

IF then the pus discharged from the abscess is white, even, smooth, without any smell, not tinging the probe, there are hopes of a recovery. It ought now to be treated as an ulcer; and detergent medicines at the same time given internally.

A P H. DCCCCXLV.

BUT if a sanious or filthy ichor is discharged, of a yellow, brown, livid, black colour, and fetid, tinging the probe with the colours of the rainbow, and like the lees of oil, the liver will be gradually eroded, the patient wasted, with almost the same symptoms as were enumerated at Aph. 941.

By this matter, so different from laudable pus, we know that the parts ulcerated must be in the very worst condition.

A P H. DCCCCXLVI.

AGAIN, if after an inflammation of the liver, the circumstances be as before enumerated at Aph. 392, a scirrhus is then formed in the part, which by its bulk, hardness, and increase, will hurt the part wherein it is seated, and also those adjacent; from whence again almost the same evils enumerated at Aph. 918, will be produced, but more slowly. This scirrhus will not yield to emollients, and acrid

Of an HEPATITIS. Aph. 947, &c.
remedies soon convert it into a horrible cancer, the dreadful effects of which may be understood from comparing the particulars of Aph. 499, with the nature of this part affected. The principal effect of this scirrhus is a perpetual jaundice.

A P H. DCCCCXLVII.

HENCE it is evident that a scirrhus ought to be treated with the utmost gentleness, and that it is hardly ever cured.

See what has been said of a scirrhus at Aph. 484, and those following.

A P H. DCCCCXLVIII.

BUT if a slight inflammation seizes only a small part of the liver, it will give rise to a small stone, a scirrhus knot, a pustle, or to a small abscess; which of themselves can do no great hurt, but upon the approach of a fever, are productive of numerous evils.

The substance of the viscera, which the ancients imagined to be an unorganised pulp, is now demonstrated to be a congeries of small vessels, and we are enabled, by the help of microscopes, to perceive in parts of the human body prepared by injection, that the vessels which send out branches on all sides, communicate one with another, by which mechanism, a small obstruction in any part will not be able to intercept immediately the circulation of the humours in the part affected; which will in some measure be performed by the anastomosing branches of the unobstructed vessels. If therefore such a slight inflammation

inflammation seizes but a small part of the liver, it can occasion no great mischief, and is, for this reason, either not known, or neglected in the cure, although it goes on to produce the same effects in the part affected, only in a less degree, which a violent inflammation of the whole liver does. Such a slegmon may therefore occasion a small scirrhus, or sometimes a little stone, when the humours secreted in the liver, or the blood itself, are disposed to form such stony concretions. See Aph. 916. But it is certain that such a hard tubercle, though small, will yet compress, and in some measure injure the adjacent vessels, but will give little uneasiness so long as the circulation continues sedate; but when a fever invades and causes a distention of the vessels, an inflammation may easily be formed round the surface of the tubercle, and spread through the parts adjacent, which may produce the worst consequences. Thus a scirrhus in the breasts of those who have good juices, will often lie dormant for many years; but when a fever from some other cause moves the blood with greater celerity, the scirrhus is suddenly enlarged, and converted into a cancer. See Aph. 881.

A P H. DCCCCXLIX.

LASTLY, an inflammation of the liver terminates suddenly in death, if the causes of the inflammation are so violent, as to stop the circulation through it, while at the same time a very high fever attends; for then the liver being constricted in its vascular extremities, and distended in its larger blood-vessels, cannot perform any of its functions; hence a violent and sudden jaundice, the vessels are ruptured, the blood and bile are extravasated, and the patient instantly expires. This event is

prognosticated, 1. From the violence of the inflammation in the liver. 2. From an excessive and sudden loss of strength; but that the vessels are actually ruptured, is known from vomitings or purgings of blood, bile, and fæces that resemble the lees of oil, black, green, intolerably fetid and cadaverous; from violent and perpetual hiccoughs, a most intense fever; unextinguishable thirst, and a very sudden paleness.

Such a violent Hepatitis rarely happens, and when it does, is always fatal.

A P H. DCCCCL.

FROM all the particulars hitherto explained, a great number of symptoms that occur in acute diseases may be clearly understood, the causes of which being unknown, has given rise to all the idle tales about *malignity* in diseases. For upon the liver depend all the abdominal viscera, and consequently their several actions, as digestion, assimilation, nutrition, recruiting the blood with fresh supplies, and the expulsion of the fæces. In the liver are three kinds of humours, which readily putrify by heat; these are, a large quantity of thin blood, the hepatic and the cystic bile. Besides, the liver is situated very near to the diaphragma and the heart, and when the extremities of the biliary ducts are obstructed, the bilious fluid of the *vena portarum* passes easily into the *cava*. May we not from all these principles perceive, how many and different kinds of jaundices may arise? Why it is some-

sometimes easily cured, and when? why it is often extremely difficult to cure? why it often kills the patient soon, and often slowly? why it comes, continues, goes off and returns again at intervals? why it appears, ceases, and returns again with anxieties, vomiting, pain, and convulsions, and what it then denotes? why a jaundice is so calamitous in acute fevers before the seventh day; and why it is after the seventh day so very difficult to cure? why it is so happily cured by a copious dysentery, of no long continuance? why blood-letting is of so little use in these disorders? why in all acute diseases it is of great importance to observe the pains, swellings, and elevation of the hypochondria? why the colour of the eyes and urine give sudden notice both of the presence and absence of a jaundice? why inflammatory, suppuratory, gangrenous, scirrhus, and cancerous disorders of the spleen, stomach, omentum, mesentery, and intestines, do always so violently affect the liver itself; and why, on the contrary, inflammatory and scirrhus disorders of the liver so remarkably disturb the functions of all these viscera? why the liver may swell to so prodigious a bulk, and afterwards shrink and dry up? why a dropsy arises from a diseased liver, and a tympany still more dreadful? why, in a dropsy, the liver wastes and dries up, while the spleen increases in bulk? and, lastly, what the nature of an hepatic dysentery is? and a great number of other queries of the like kind.

We come now to some practical deductions, which follow from what we have before advanced concern-

ing an hepatitis, and which afford great light both in the knowledge and cure of diseases.

Symptoms,—the causes of which being, &c.] Physicians have observed two sorts of fevers. In the one the circulation is violent, the heat intense, the respiration short and quick, the pulse strong, large and quick. Whatever lessens the motion and quantity of the humours is here beneficial, as bleeding, diluents, nitrous medicines, &c. In the other, the strength is suddenly weakened, and the heat being much less, is often attended with chilliness, great anxiety, and a very quick, weak, and unequal pulse, often imperceptible to the touch, with little thirst, or none at all. These fevers, from the sudden loss of strength which they occasion, even in the most robust people, have, not without reason, been denominated *malignant*. Here faithful observation has taught us, that such remedies are useful as raise the depressed powers; whence scordium, rue, angelica, and the like, that have gained the title of alexipharmics, are given in such fevers with desirable effects, when infused in a watery drink, with a little wine or vinegar, and drank plentifully: for when the vessels are filled, a moderate sweat usually breaks forth, the vital powers are raised, and the epidemic miasma often expelled the body. But when this method of cure is used in the former fever, where there is great heat and an inflammatory thickness of the blood, all the symptoms are rendered worse, and the life of the patient exposed to the utmost danger. For this reason Sydenham strenuously opposed the word malignity, which the physicians of his time applied to all bad fevers, even to those of the inflammatory kind.

But as an Hepatitis is often attended with great anxiety or oppression, and as all the functions of the abdomical viscera must either be suspended, or at least disturbed, the circulation of the blood through the *vena portarum* of the liver being obstructed, there will be sometimes a great weakness from the corrupted

rupted bile lodged about the præcordia, from whence some have unskilfully treated an hepatitis, as if it were a malignant fever.

In the liver are three kinds of humours, &c.] The bile is one of the sharpest fluids of the body, very speedily putrifying, and the blood of the *vena portarum*, contains the immediate matter of it. But the bile has a power of dissolving the blood, inso-much that after a long continued jaundice, the patient falls into an incurable dropsy. Besides, the venal blood returning from the stomach and intestines, contains in it the most fluid parts of the alimentary bile absorbed by the mesenteric veins; the blood going from the spleen to the liver, by the splenic vein, is thin and attenuated; and the venal blood of the omentum contains in it much of that subtile dew which exhales from the arteries into the cavity of the abdomen. From all which the reason appears, why the blood of the *vena portarum* is so thin, notwithstanding it is now become venal, and lost much by the secretions made in the arteries; for every thing duly considered, this blood seems to return with more thin juices to the liver, than it had when it was arterial. But such blood stagnating in the large trunk and branches of the *vena portarum*, while the liver is obstructed, being lodged in so warm a place, continually shook by the action of respiration, and charged with the immediate matter of the bile, that is so apt to putrify, must of course be easily corrupted. Hence, as observed before at Aph. 933, laudable matter is rarely formed in suppurations of the liver.

The liver is situated very near the diaphragma and heart.] This is evident from anatomy, and it cannot be any wonder if disorders of the liver often affect these parts. See Aph. 936, N°. 5.

When the extremities of the biliary vessels are, &c.] For whatever flows through the *vena portarum*, either passes through the secretory canals into the *porus biliaris*

liarius, or else through the extremities of the *vena portarum* into the *cava*. But since the hepatic bile, secreted from the blood of the *vena portarum*, is a fluid much thinner than the blood itself; it is apparent, that if it be obstructed in its course through the biliary ducts, it will return and go together with the blood into the *cava*, and infect the whole mass of circulating fluids with a bilious cacochymy.

But as by an obstruction of the biliary ducts, the matter of the bile is obliged to pass into the *cava*, so likewise an obstruction in the ultimate extremities of the *vena portarum*, rendering the passage of the blood difficult into the *cava*, may sometimes so dilate the biliary ducts, as to admit the red blood to pass through them in a considerable quantity to the duodenum, from whence it may be expelled both upwards and downwards. But this difficult passage of the blood through the extremities of the *vena portarum*, into the branches of the *cava*, is most frequently caused by an atrabiliary tenacity. Cases of this kind have often happened to myself, in the course of a long practice, and almost constantly in lean persons, of an atrabiliary constitution. I visited a man, who after great anxiety about the præcordia, and a troublesome heartburn, had a vomiting of blood, which was soon followed with a copious discharge of blood likewise by stools, whereby he expired in a few hours. Together with some friends skilled in anatomy, I carefully examined all the abdominal viscera, and yet we were not able to find any broken vessel, nor any apparent defect in any of the viscera. I have seen other cases of the same kind, but without their being fatal; but it is evident these cases must always be dangerous. These vomitings are generally preceded by a troublesome tension about the abdomen, and the patient is afflicted with a lasting heartburn, especially after filling the stomach with food. But we before observed, in treating of a febrile anguish, that although the obstructing matter was lodged in the liver,

liver, yet the principal complaint is by the patient perceived about the *cardia*, or upper orifice of the stomach, and therefore that symptom confirms our present opinion. But those patients seem here to recover; who have a discharge of blood into the duodenum, not from any ruptured vessels, but from an over-dilatation of the biliary ducts; by which means the obstructing matter that lodged in the narrow extremities of the vena portarum, being free from the pressure of the blood behind, is by the lesser vessels urged back again into the larger trunks, and the obstruction in the liver is thus happily resolved. See Aph. 140, and 400.

How many and different kinds of jaundices may, &c.] What a jaundice is, and how it is to be distinguished, we declared before at Aph. 918. But it always supposes an impeded secretion of the bile from the blood of the vena portarum, or else an obstacle to the passage of the bile into the duodenum. The first difference therefore of the jaundice will depend upon the bile, whether it be the cystic or hepatic, or both, that regurgitates into the blood; and then again it may vary according to the different state of the bile itself, since that may be very different, both as to its colour and other qualities.

But a jaundice may be various, in respect to the causes which impede the secretion of the bile in the liver, or obstruct its passage into the duodenum. For it appeared before, that this cause might be an inflammation, and that even in various degrees,—or a suppuration, or a scirrhus, or a cancer. Again, if we consider the various organs that lie contiguous to the liver, especially to its concave part, it may thence sufficiently appear what idea we are to entertain of the varieties of the jaundice, and that it is a disease produced from most different causes, though distinguished only by one name.

Why it is sometimes easily cured, and when.] We often meet with such kinds of jaundice as are easily cured.

cured. Thus a jaundice arising from a slight inflammation of the liver, curable by a mild resolution, or by a coction and excretion of the morbid cause, yields easily to the proper treatment. So likewise a jaundice in pregnant women, from a compressure of the cystic, or common biliary duct, by an enlargement of the uterus, or from hard fæces collected in the colon; in these cases, the foetus being delivered, and the fæces evacuated, the disorder ceases spontaneously. We often meet with a jaundice in new-born infants, that is easily cured.

Why it is often extremely difficult to cure.] If the cause is so confirmed, as to be very difficultly or not at all removeable, or whenever the structure and substance of the liver are so changed and corrupted by the disease, that it can no longer secrete the bile, then the jaundice may be deemed incurable.

Why it often kills the patient soon, and often, &c.] When an atrabiliary matter collected in the other viscera becomes acrid, and being dissolved, is suddenly thrown with a febrile violence upon the liver, a speedy death ensues; which is also the consequence when the liver is so violently inflamed as to rupture its blood-vessels, and when a gangrene corrupts the whole substance of the liver. But when an abscess is once formed in the liver, if it does point outwardly, so as to admit of being opened, death then is as certain, though more slowly. But a jaundice is much more lingering when it proceeds from a scirrhus, from calculous concretions, or from an atrabiliary tenacity of the blood gradually collected in the liver. I had the care of a woman of three-score, who had laboured under a jaundice for twelve years, which at first came by turns, but for the last year was continual, and tinged her body of a black colour, and her eyes of an intense yellow. By a continued use of the juice of grass, whey, and the like in the spring season, with a course of the spa waters

waters in the summer months, and a great quantity of venice-soap given with honey in the winter, the matter impacted in her liver was at length resolved. A purging came on, which held for six months, with a relief of all the symptoms; the stools were extremely fetid, and brought away a clay-like matter, replete with small, rough granulations of calculi, and she at last recovered from so obstinate a malady.

Why it comes, continues, goes off, and returns, &c.] We often meet with such kinds of jaundice, which in their beginning are not easily distinguished; for after a slight cardialgia, and anxiety about the præcordia, the patient has the next day a yellowness in the eyes, with a high-coloured urine, and then seems to be very well again. In a few months, sooner or later, the same symptoms suddenly return. Many physicians have believed this to be a critical or salutary jaundice; and even Sydenham himself seems not to have well understood the cause and nature of it, since he describes it under the denomination of an hypochondriacal or hysteric colic. As I have had frequent opportunities of seeing this disease, it may be of use to give a particular description of it.

It is seldom to be met with in young Persons, but often in those who are full grown, and inclining to oldage; more especially such as are afflicted with long continued grief. But above all persons it invades those most who live a sedentary life, and those who live high, and after having filled their stomach, sit idly inclined to the table, by which posture all the abdominal viscera are compressed.—They begin first to complain of a troublesome tightness about the præcordia, with a sensation like that of an oppressing weight. Some hours after meals, there is a sharp heart-burn, or pain of the cardia, which I have sometimes known to last several months before an attack of this periodical jaundice. There is next a slight yellowness in the greater corner of the eyes, the urine is somewhat higher coloured, and bilious
fæces

faeces are discharged by stool : afterwards a sudden and inexplicable anguish arises, without any antecedent cause, with an intolerable pain about the cardia, and sometimes even throughout the whole abdomen, whence it is often taken for the iliac passion, or the pain of the colic ; and lastly, a fever comes on with enormous vomitings. When these symptoms have continued some hours, they abate or go off, leaving the body all over tinged with the colour of a jaundice. In some, the first attack has only tinged the face and breast of a yellow colour, but then the urine is of a most deep yellow, and the patient finds no material complaint. Some have a troublesome pain in their back, and loins, and sides, before the yellowness appears ; which Hippocrates likewise observed, when he says, “ That those who have a pain “ of the side and loins, without any manifest cause, “ become icterical.” In some there is an intolerable itching the whole time the skin is suffused with bile. After some weeks, or even months, the same complaints return, and in the same order. When the patient has been several times thus attacked, the jaundice remains perpetual, worse at sometimes than others, but never attended with such violent symptoms as at the first attacks. The icteritious colour is now very intense, and diffused all over the body ; even the saliva (which is somewhat rare) has a bitter taste, and in process of time the whole body looks almost black, the ancles begin to swell, and finally, the abdomen filling with water, the patient dies of a dropsy.

Sometimes the fit is so violent, and the fever so intense, that a true inflammation of the liver ensues, and sometimes ends in a speedy death. Sometimes also a Suppuration will follow, like that related in the Edinburgh Medical Essays*. But the former course of the disease more frequently obtains, ter-

* Vol. ii. p. 345.

minating at length, if it be not cured, in a lingering manner. The *stercora* sometimes appear white, or clay-like, a few days before the fit; at other times, the first attacks of the malady begin with a flux of yellow matter by stool, the skin and urine appearing at the same time yellow.

All these symptoms manifestly shew, that the cause of this disease is some obstruction that hinders the flux of the cystic bile into the duodenum; hence the quantity of bile daily increasing, it by degrees distends the gall-bladder, until by the greater bulk, or greater acrimony of the stagnant bile, drove into the narrow neck of the gall-bladder, pains arise with convulsive motions of the abdominal viscera, enormous vomitings, and restless tossings of the body from the anguish which is scarce tolerable. But by all these concussions, and more especially by the pressure of the diaphragm and abdominal muscles acting together, the obstacle preventing the egress of the bile is removed, or that contained in the gall-bladder is repelled into the blood; but then a jaundice ensues; and if the cause preventing the exit of the bile is not at the same time removed, the bile being afterwards accumulated, will cause the return of the paroxysm. But when the bile has been often repelled into the blood, the biliary vessels become so dilated, as to allow a repulse of this fluid with much less force, and at length may be turned with ease; hence the jaundice becomes perpetual.

I have often wondered, that patients, under a perpetual jaundice, should have so keen an appetite, digest their food, and the belly answer at the same time. Possibly the hepatic bile may at these times be supplied in greater quantities, or may be more acrid, so as to supply the want of the cystic bile; or perhaps some part of the cystic bile returned to the liver, may get into the *porus hepaticus*; for that there are ways open from the *porus hepaticus* to the gall-bladder appears from anatomy.

It

It is evident from what has been said, that any obstacle hindering the exit of the bile from the gall-bladder, may be the cause of this disease, and that the cure is subject to various difficulties, as the cause is more or less easily removeable. I have seen bile discharged by vomiting as tough almost as glue, and the jaundice has no more returned after it. But the most frequent cause of such a periodical jaundice is some calculous concretion formed in the gall-bladder; for the bile confined, forms stony concretions in a very short time. Yet it is apparent such stones produce no jaundice, unless they block up the course of the bile from the gall-bladder, and therefore if they are often found by anatomists in bodies who never were afflicted with a jaundice, it cannot from thence be concluded, that these stony concretions may not be the productive cause of a jaundice. Hence also we may understand why, upon changing the situation of these stones, a free passage may be opened for the bile into the intestines, so that sometimes, even in the height of this jaundice, we have yellow stools.

Sometimes it also happens, although but rarely, that the discharge of the cystic bile shall be impeded, and the stools appear white, when yet there is no appearance of a jaundice in the skin; but then the bile, although retained in the gall-bladder, is so viscid and glutinous, that it cannot flow back again into the vessels of the liver; but by gradually increasing in quantity, it distends the gall-bladder to an immense bulk. There is a wonderful case of this kind in the *Edinburgh Medical Essays* *.

There are only two ways of relieving the patient, either by dissolving the gall-stones, or by promoting their passage into the duodenum, by which we may hope for their evacuation, among the other intestinal contents.

* *Tom. ii. p. 351.*

I have by many trials endeavoured to find out a menstruum able to dissolve these stony concretions, but have not been happy enough to discover one. A long continued use of the juice of grass, dandelion, succory, fumatory, and the like plants, has, in the course of my practice, been generally followed with plentiful discharges of stony fragments of this kind among the intestinal fæces; and sometimes even the fæces have appeared hard and rough with such fragments, so as even to excoriate the anus in their exclusion: but I am not certain they were fragments of stones, thus broken within the body by such a menstruum; because we often find such small calculi, and even sand, within the gall-bladder, hepatic ducts, and even in the substance of the liver itself. A remarkable case of this kind is related by *Vesalius*, who found in the body of Prosper Martelli of Florence, the gall-bladder twice as large as one's fist, filled with small stones*. It seems therefore that the retained bile may sometimes concrete into large grumes, without running together by length of time into larger calculi, and it would be a mistake to believe, that a discharge of them by stool, followed from their being broke into lesser parts, by the use of proper medicines.

The cure therefore consists in dilating the passages through which the calculi must pass into the duodenum. It is true these passages are very narrow, but faithful observations inform us, that they may be wonderfully dilated, so as to admit stones of considerable magnitude. The same thing happens to the ureters, which have been found to greatly enlarged in persons subject to the gravel, as easily to admit the fore-finger, although they are naturally no bigger than a small goose-quill. But nature here seems to endeavour the expulsion of these calculi by a kind of automatic motion: for these icterical co-

* In Epist. de Rad. Chin. tom. ii. p. 647.

lics are usually attended with enormous vomitings, that by these violent concussions of the abdomen the expulsion of the stone may be forwarded. For when once these passages have been sufficiently dilated to transmit a calculus of some bulk, they will afterwards transmit more of the same sort with much less difficulty; and medical history supplies us with many cases, in which stones have been voided by the anus, where all circumstances shew that they were neither first bred in the intestines, nor afterwards increased there in bulk, but being expelled from the gall-bladder, have, in a few days, found a passage through the intestines.

But the cure of such patients is either during the paroxysms, while the anxiety, vomitings, and pain are present, or when these symptoms have ceased, and the jaundice appears. In the former, there is nothing better than a decoction of honey drank moderately, in order to facilitate the vomitings. For these salutary efforts of nature help to move forward the stone, and evacuate the accumulated bile; if the passages are not intirely blocked up, or at least it may be thus repelled into the liver, and all the pressing symptoms relieved. The same decoction will be also serviceable, injected in the form of clysters, to wash out the gross fæces from the colon, where, by their weight and pressure, they may hinder the exclusion of the bile. But when the anguish, vomiting, and pain become intolerable to the patient, opiates must be given to quiet these disturbances.. Nor will opiates here retard the expulsion of the stone, but rather promote it, since they remove the spasmodic stricture of the vessels. But if an inflammation is to be feared, or if the vessels are too full of blood, so as to endanger a rupture of some vessels by the strainings to vomit, bleeding will then be of service, which otherwise contributes nothing towards the cure of the disease.

After

After the urgent symptoms are quieted, the indication is to resolve and expel the stony concretions; which is best done in the beginning of the disorder, when the stones are both softer and smaller, and may therefore be either dissolved, or at least more easily excluded. I have ordered the strongest decoctions of grass, dandelion, succory, fumitory, and the like plants, boiled in whey, dissolving half an ounce of sal polychrest in every pint of the decoction, to be sweetened with two or three ounces of the syrup of the five opening roots, or of fumitory. A third part of this apozem is to be taken an hour before breakfast, dinner, and supper every day for three months. In the summer months I direct a course of spa water, and in the autumn and winter a large quantity of venice soap with honey, drinking after it a decoction of the five aperient roots. By a perseverance in the use of these medicines I have cured these periodical jaundices, and have always found stones in the stools, or at least stony grumes in great plenty. I have likewise directed the patient to rub with his hand that part of the hypochondrium where the bottom of the gall-bladder projects beyond the margin of the liver, and also to ride, walk, and to use all other kinds of exercise.

But when the stones lodged in the gall-bladder are of an extraordinary magnitude, or when the passages through which they must pass are not easily dilatable, there is then but little hopes; since we know not any medicine that can infallibly dissolve these gall-stones within the body. But we learn from observations, that sometimes the gall-bladder distended with bile has grown to the peritonæum, and by a subsequent inflammation and suppuration, a fistulous ulcer has been formed, from which very large stones have been extracted; and the celebrated *M. Petit* has proposed the operation of cutting for stones in the gall-bladder.

Why a jaundice is so calamitous in acute diseases, before, &c.] When a jaundice appears in acute diseases before the seventh day, it is always to be suspected, because it denotes an increase of the disorder, and that the vessels of the liver, hitherto pervious, are now beginning to be obstructed with the yet unconcocted matter; for even the fat of the omentum dissolved by an acute fever, and an atrabiliary matter fused by the same cause, may produce an hepatitis of the worst kind. For which reason Hippocrates has pronounced, "That a jaundice arising in fevers before the seventh day is a bad sign"; but prudently adds, "unless the humours go off by stool." For if the matter driven into the liver forms an obstruction, yet by a dilatation of the biliary ducts it may soon get into the intestines, and be evacuated by stool; in this case there is a kind of translation of the morbid matter into the *vena portarum*, but making there only a short stay, it is, without injuring the liver, expelled thence through the *ductus hepaticus* into the duodenum. I have met with many cases of this kind, and among them one, of a man who, in the middle of the night, fell into water, which much affrighted him. The next day he was taken ill of a very sharp pleurisy in his left side. On the fourth day a jaundice colour appeared in the eyes, with a considerable swelling in the hypochondria; but on the same day he had five stools, which relieved him greatly, and the flux continued until the end of the ninth day. The matter discharged was first yellow, and very fetid, afterwards brown, and lastly ash-coloured, and more ill-smelling, but on the fourteenth day a critical sweat carried off the distemper.

But a jaundice has been fatal in acute diseases before the seventh day, when the matter oppressing the liver is not carried off by a flux, as appears from

a number of observations made by Hippocrates. Hermocrates, was seized with a jaundice on the sixth day of his fever; his urine was crude, and he became delirious; and although his fever lingered beyond the time of those that are acute, yet he expired on the twenty-seventh day. Indeed a copious flux came on the twenty-fourth day of the fever; but coming too late, it gave no relief: for the success in these cases depends upon a speedy discharge of the offending matter, thrown upon the liver by the violence of the disease*.

Why it is after the seventh day so very difficult to, &c.] We have already observed, that the matter of the disease being concocted and rendered moveable, may by a metastasis leave its first seat, and remove to other parts; and that this matter might likewise be deposited in the liver, through which it is often unable to pass, without the greatest difficulty, and there fixing itself, produces a dangerous abscess, extremely difficult to cure. See Aph. 936.

Why so happily cured by a copious, &c.] Because the matter oppressing the liver is discharged through the intestines; but the humours in the liver easily putrify, for this reason, it may occasion pains and griping in its passage through the intestines; but this dysentery must soon terminate to prove salutary; for if the liver be once corrupted, an incurable and lingering dysentery follows. In the epidemic fevers described by Hippocrates, those patients who had a jaundice on the sixth, were mostly recovered by a dysentery; and he commends a dysentery that is not lingering for the cure of disorders of the spleen; for all the humours of the spleen are conveyed to the liver by the vena porta, and from thence they may get into the intestines. Hence it is apparent, that nature makes the liver her common road to remove

* Epidem. 3. Ægrot. 2.

the morbid matter from other parts of the body, and to carry it off by a dysenterical flux.

Why blood-letting is, &c.] Because the blood of the vena porta wants all the impressed force of the heart and arteries, that vessel serving all the uses of a vein. But an inflammation in the ultimate extremities of the hepatic artery requires bleeding; yet we do not entirely condemn bleeding in this disease, since it may lessen the violence of the fever, diminish the heat, relax the vessels, and make room for the easy admission of diluents and attenuants into the blood.

Why in all acute diseases it is of, &c.] Hippocrates carefully observed the various conditions of the hypochondria in most diseases, and even mentions the hypochondria oftener than the pulse. Consult here Aph. 701, 735, and 909.

Why the colour of the eyes and urine, &c.] For the bile being a saponaceous fluid, easily dissolves in the watery parts of the blood, and together with them enters into such small vessels as will not admit a particle of red blood. The tunica adnata of the eye is composed of such small vessels, and only covered with a most thin pellicle, so that the yellow arising from a mixture of the bile with the blood, is here immediately perceived. The renal tubes which secrete the urine likewise deny admittance to the red blood, and permit only the watery parts of the blood, with the saline, oily, and acrid particles to distil through them; and for the same reason the bile will likewise first shew itself in the urine by tinging it with its own colour. But in a lingering jaundice, the red globules of the blood are gradually dissolved by the intermixed bile, while the quantity of the bile repelled into the blood, is daily augmenting, whence at length the whole body appears of an intense yellow, while the fæces being no longer tinged with the bile, appear of a whitish or greyish

greyish colour, and so soon as these become yellow, the skin and urine lose their jaundice colour.

Why inflammatory, &c. disorders of the spleen, &c.] Because the concave part of the liver lies upon most of the viscera here mentioned, whereby disorders of these organs may injure the liver, even by mere contiguity. Besides, the venal blood returning from the abdominal viscera, flows into the trunk of the vena porta, and thence distributed throughout the liver, and by this communication, disorders of these parts are easily imparted to the liver, or at least the secretion of the bile in the liver may be greatly disturbed.

And why, on the contrary, inflammatory, &c.] For the very reasons last given: for the liver being obstructed, there is a stop to the free circulation of the blood through the smaller vessels of the vena porta; therefore the veins of the abdominal viscera subservient to chylication, cannot evacuate the blood they contain, while more of that fluid is continually impelled into them by the arteries, whence all these vessels are overfilled and distended. This accounts for that anxiety which is felt about the præcordia, when the liver is distempered; and also why violent pains often seize divers parts of the abdomen, and of the loins, to which the mesentery is affixed, while the cause of the complaint lies at the same time in the liver. Hence it is that those pains are so often mistakenly ascribed to a nephritis, an inflammation of the bowels, or to spasmodic constrictions, when in a short time an ensuing jaundice demonstrates the true cause.

Why the liver may swell to, &c.] This is owing to the soft and pulpy fabric of the hepatic vessels, which are easily dilatable by the humours that continually flow in them.

Why a dropsy arises from a diseased liver, and, &c.] For the bile continually impelled into the blood, so dissolves the red globules, that at length hardly any

of that colour remain. We have already observed, that a putrefaction is greatly to be dreaded in disorders of the liver; and in treating upon the material cause of flatus and belchings, it appeared, that the air contained in our fluids was set free by putrefaction, and became elastic again, therefore a tympany following a putrefaction of the liver is a disease much worse than an ascites.

What the nature of an hepatic dysentery is.] If the matter collected in the liver makes its way through the porus hepaticus into the intestines, it will, by its irritating acrimony, produce very severe gripes and pains, with a continual tenesmus. While in this manner the morbid matter may be carried off, the liver still remaining sound, such a dysentery will be salutary. But when a pus, rendered acrid by long standing, drains into the intestines from an abscess of the liver, the dysentery will still be much more dangerous; or if again a putrid liquid drains from the corrupted liver; or if a corroding ichor shall distil into the intestines from a scirrhus of the liver, degenerating into a cancer, a fatal dysentery then ensues, that is curable by no Art.

Of an INFLAMMATION of the STOMACH.

A P H. DCCCCLI.

THE Stomach, like other parts of the body, may be seized with a true inflammation, the signs and effects of which are generally these following; namely, a burning, fixed, and pungent pain in the pit of the stomach; an exasperation of the pain in that point the very moment any thing is taken into the stomach; a most painful vomiting immediately after eating
 2 and

and drinking, attended with a tormenting hiccough; extreme and continual anguish about the præcordia; an acute continual fever. The causes are those of inflammations in general, or it may be communicated by a phlegmon of the adjacent parts, or from acrid substances taken into the Stomach.

A burning, fixed, &c.] We know from anatomy that the stomach is seated in the superior and anterior part of the abdomen, is in part covered with the liver on the right side, has the spleen on the left, the pancreas below it, and the diaphragm above it, through which its upper orifice passes: therefore an inflammation seated in these parts may render the diagnosis of a phlegmon in the stomach somewhat doubtful. To which add the change of place which the stomach undergoes at different times, according as it is full or empty, or distended with flatus, &c.

An exasperation of the pain, &c.] This is almost a pathognomonic sign of an inflammation of the stomach. Why a singultus attends, is apparent from what was before said at Aph. 659.

Extreme and continual anguish, &c.] For the nerves spread through the stomach are very numerous, and the par vagum dispersed through all the abdominal viscera, enters the left orifice. Therefore when painful and distended parts of the stomach compress and irritate the adjacent nerves, the most severe spasms are excited through all the abdominal viscera, from whence anguish is produced, as was demonstrated at Aph. 633.

An acute continual fever.] Which attends every considerable inflammation, more especially those of the viscera. But that inflammations of the adjacent parts may affect the stomach, is very evident, and spread in the same manner from place to place, as external inflammations. It is then no wonder in a

person dead of an inflammation of the liver, diaphragm, or other parts, if we find the stomach inflamed, or even gangrenous, of which many instances appear from Bonet's collections.

From acrid substances, &c.] It is certain that the stomach can bear many acrimonious substances without much damage, of which many are observed by Swalve, in his elegant treatise *De Querculis Ventriculi*. For many substances that will injure the fauces, are received into the stomach without giving any remarkable uneasiness. On the contrary, there are others which soon corrode the stomach, excite the most excruciating pains, and dreadful convulsions, with an inflammation of the worst kind. There are again other acrid substances, in which no sensible acrimony appears, and yet by a latent stimulus, hardly to be corrected, will excite an inflammation in the stomach, after the most violent convulsions. Hoffman relates such a case, in which eight grains of the vitrum antimonii were given, from whence violent convulsions, and the most ardent pains were excited, with violent vomitings, and at last ended in death.

Besides, it has been observed, that an acrid matter deposited in the stomach, whether generated in the body, or conveyed thither by other passages than that of deglutition, will occasion there the most violent inflammations, and often a fatal gangrene. The great Sydenham also seems to persuade us, that the pestilential contagion first roots itself in the stomach, if it be not timely carried off by sweats before it excites an inflammation there. Sometimes even the worst kinds of the small-pox are attended with such symptoms, as threaten a dangerous inflammation of the stomach; and therefore anguish about the præcordia, with vomiting and burning heat after the eruption, are very suspicious signs; for there is then danger lest the variolous pustles should seize the stomach, and produce in it an inflammation.

A P H. DCCCCLII.

BUT an inflammation of the stomach is commonly fatal in a short time, unless it be speedily cured, partly from the necessary functions of the part being injured, and partly from the infinite number of nerves with which it is connected.

A P H. DCCCCLIII.

IT usually, like other inflammations of the viscera, terminates either in health, or in suppuratory scirrhus, cancerous, or gangrenous disorders; or else in sudden death, which is hastened by convulsions.

A P H. DCCCCLIV.

AS soon as this disease is known by its signs, enumerated at Aph. 951, we are immediately to direct copious venesection, which ought to be repeated, if necessary; mild, nourishing; emollient, and antiphlogistic apozems, contrary to the immediate cause of the inflammation, with clysters and fomentations of the like kind. But all acrid substances are carefully to be avoided, more especially vomits.

We have already shewn, that venesection is the principal remedy in the beginning of all inflammations; and we have also applauded the use of diluent drinks, with the addition of nitre, honey, rob of elder, and the like. But here there is great difficulty to avoid irritating the inflamed stomach by the least acrimony;

acrimony; therefore, although these remedies are justly recommended for the cure of inflammations, yet we hardly dare to give them here, or at least, they must be so diluted as not to offend the eye by its acrimony, if dropped into it. In the *Materia Medica*, under the present aphorism, there is a lenient drink directed, which yet is by the wood-sorrel, and currant jelly, too sharp for the stomach to bear, although it is softened by the yelk of an egg. But fresh whey, decoctions of barley, oatmeal, or bread, with the yelk of an egg, will afford all the nourishment that is here required. A weak chicken-water is likewise very soft and light, and if ten or twelve grains of nitre be added to every pint, the stomach will bear it very well. But it is here to be observed, that these drinks are to be given in very small quantities at a time, that the stomach may not be loaded or oppressed; which would increase all the complaints. If the acrimony, which corrodes and inflames the stomach be known, remedies which correct that acrimony are to be given. But as attenuating and diluting liquors cannot be conveyed, in a short time, into the blood, we must endeavour to do this by other ways; such are warm-bathings, fomentations, epithems, and especially by clysters often repeated, and long retained, that they may be reformed by the bibulous vessels of the intestines.

The vulgar practice, which, for the most part, recommends spirituous, bitter, and hot spicy things, is here highly dangerous; and the rule which some physicians establish and follow, namely, *that a vomit is cured by a vomit*, may prove absolutely fatal.

A P H. DCCCCLV.

IF the inflammation terminates in a suppuration, numerous mischiefs ensue, but chiefly a nausea, vomiting, and pain; which often appear wonder-

wonderful to the ignorant, and, their cause being unknown, are very rarely cured; but when it is once known, it must be treated as an abscess. See Aph. 402, & seq.

When there is reason to suspect an abscess in the stomach, an emollient decoction of marsh-mallow and the greater comfrey roots, of mallows, len-seeds, and the like, are to be given often, and in small quantities, to soften the abscess, and hasten its breaking into the stomach. But when the purulent discharge, either upwards or downwards, shews that the abscess is broken, the mildest detergents are first to be used, and afterwards consolidating medicines, as directed in the cure of an abscess. But while the ulcer is discharging, the stomach must not be loaded with much, nor with solid food; for the parts which begin to be united, will thereby be easily separated again; nothing therefore but flesh-broths boiled with barley, bread, &c. can be here used; although nourishing clysters may perhaps support the strength for many days, when the abscess is cleansed, and, by giving rest to the stomach, promote the consolidation.

A P H. DCCCCLVI.

WHEN the inflammation generates a scirrhous, or a cancer, it excites enormous vomitings, and intolerable pains, which are exasperated by every thing taken into the stomach, and are rendered fixed and lasting by the use of all acrid medicines.

A P H. DCCCCLVII.

THIS scirrhus, or cancer, can only be alleviated by the most lenient remedies; such as those directed at Aph. 490, 491, 506, to 511. but it is rarely cured; although mineral waters are here of wonderful efficacy; such as those of Bath, Aix la Chapelle, Bourbon, &c.

All the internal remedies directed for the cure of a scirrhus and cancer, in the above cited aphorisms, will be here of service. But the greatest relief is to be expected in the avoiding, both in diet and medicine, every thing that may exasperate the complaints. Broths boiled with rice, and emollient pot-herbs, are the best nourishment; also the yelks of eggs, with the cream of barley, or oat gruel, given in small quantities. But in a recent scirrhus of this part, a course of Venice soap has been of service, when taken to the quantity of two drams a day for several months; which yet must be laid aside, if the pains or vomitings increase upon taking it into the stomach; for there is then reason to fear that the scirrhus is already degenerated into a cancer, which will not bear this otherwise efficacious remedy.

A P H. DCCCCLVIII.

FROM what has been said, from Aph. 914, to Aph. 958, the diagnosis, prognosis, origin, nature, effects, cure, and palliation of an inflammation, suppuration, gangrene, scirrhus, and cancer of the spleen, pancreas, and omentum, may be evidently derived.

[Of the Spleen.] Disorders of the spleen are often mentioned by the ancients, but with such circumstances as shew, that they sometimes described the diseases of other parts under those of spleen. The left flexure of the colon, lying immediately under and contiguous to the spleen, may be distended by indurated fæces and flatulencies, and produce pains and swellings in the region of the spleen. Thus Trallian, for an *inflation of the spleen*, directs carminatives, which are proper enough to disperse; but it is apparent that the cavity of the stomach and intestines is the only seat of flatulencies. Hippocrates also observes, that the spleen will be both swelled and contracted again in the same day; that in the first state it will occasion acute pain; but when the swelling subsides, the pain then ceases. But an inflamed or obstructed spleen, can be subject to no such sudden changes; although that part of the colon which lies contiguous to the spleen, may often be the seat of those flatulent tumours, which so suddenly appear, and as suddenly subside. Besides, the ancients often mention scirrhusities of the spleen very quickly cured, but a scirrhus cannot be so suddenly removed, and even obstinately resists the most powerful remedies.

But it must be allowed, that the spleen is sometimes seized with an inflammation; though it is less liable to inflammations than the other viscera. The principal signs of an inflamed spleen are, an acute continual fever, with a pain in the region of the spleen, extending sometimes as high as the shoulder, breast, and clavicle of the affected side. From these symptoms it is probable that an inflammation of this viscus has been treated as a pleurisy, and commonly without injury to the patient; as the cure of both these diseases is much the same. I am confirmed in this opinion, at present, from a case sent me by the celebrated Dr. Ant. de Haen; from the whole history
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of which it appears, that an inflammation of the spleen, neglected by the patient, degenerated into a suppuration; and that the matter absorbed, was translated to various parts of the body, till at last the whole mass of blood was infected with a purulent cachymy. Hippocrates seems also to have observed a suppuration of the spleen, and orders it to be opened in the same manner as an abscess of the liver. He further observes, that the distemper sometimes ends in a dropsy, which consumes the patient, and that those who have a hard or scirrhus spleen live to an advanced age.

But a scirrhus of the spleen is oftener met with in practice than an abscess. Such an hard tumour, by its weight and pressure, may greatly injure the adjacent parts, and excite the most violent pains. Ruysch found the spleen in the body of a woman eight times larger than it ought naturally to be, and by its weight had got into the pelvis. When a scirrhus of the spleen degenerates into a cancer, it eats away all the circumjacent parts, and after insufferable torments, it produces a sudden and fatal hæmorrhage.

Of the pancreas.] From the situation of the pancreas it is evident, that the disorders of it are not so easily distinguished as those of the spleen, and when it is swelled it must compress the stomach and duodenum; and therefore disorders of the pancreas may be easily mistaken for those of the stomach and duodenum; but then no injury can accrue to the patient from such a mistake, because they all require the same method of cure; yet sometimes a scirrhus pancreas has so much enlarged itself as to be outwardly perceptible to the touch; but sometimes, even when its bulk is considerably increased, there appears no remarkable swelling outwardly. This is confirmed by de Graaf, who has collected together
many

many cases of the pancreas ulcerated, scirrhus, &c. by which physicians may learn to give only the mildest remedies in chronical disorders of the abdomen.

Of the Omentum.] The omentum is extended over the intestines, from the bottom of the stomach, as low as the navel, and sometimes it descends much lower; and although it hangs loose before, yet it is connected to the duodenum, colon, pancreas and spleen; whence various maladies may arise, as the different parts of the omentum are affected, which likewise will render the diagnosis more difficult.

If a phlegmon of the omentum turns into a supuration or a gangrene, the most dreadful disorders ensue, when the gangrenous ichor is poured into the cavity of the intestines. When it is hardened into a scirrhus, it may produce numerous evils, either by compressing or distracting the parts to which it is contiguous or connected. It sometimes happens in women, who have recovered their lying-in, that a hard oblong swelling arises in the abdomen, which sometimes remains for many years without any pain or uneasiness, more than the incumbrance of its bulk. But the omentum seems to be forced upward in gravid women, by the distended uterus; by which being compressed, it may then become indurated or scirrhus. The cure of the disorders of the omentum may be easily deduced from what we have said before.

Of an Inflammation of the INTESTINES.

A P H. DCCCCLIX.

THE intestines, but chiefly the small ones, are often, as well as the stomach, seized with an acute inflammation in their membranes, from the common causes of all inflammations conveyed to these parts; or from things acrid, taken under the form of drink, food, sauces, medicines, or poisons, conveyed into the intestines, and retained in their plicæ, or folds; and also from a sharp, putrid, and fetid purulent, ichorous, gangrenous, bilious, and atrabiliary matter, conveyed from the œsophagus, stomach, liver, spleen, pancreas, and omentum, adhering to, and corroding the intestines; or lastly, from a preceding violent convulsion, generating flatus, stopping their peristaltic motion, and producing an inflammation.

It is confirmed by practical observations, that the smaller intestines are oftener inflamed than the larger; for the pains in this disease are usually seated in the umbilical region, where only the small intestines are naturally situated. Probably the large intestines are naturally less liable to inflammations, as they serve to collect and retain the gross and more putrid fæces. But although every thing that stops up the intestinal tube may cause inflations and distentions of the bowels, yet, unless there be also great acrimony at the same time, they rarely produce this acute disease, but rather more obstinate and chronical disorders, like those enumerated at Aph. 719, where we treated of
 2 a diarrhœa.

a diarrhæa. It is acrimony therefore that is the most frequent cause of inflammations of the bowels, but this acrimony is either derived from what is taken into the stomach, or from matter formed in other viscera, and translated thence into the bowels; both which we are now to consider.

Under the form of drink, food, &c.] What mischiefs may follow the use of fermenting liquors was before shewn at Aph. 646, & seq. where we treated of flatus. Sometimes also we drink liquors which are either acid in themselves, or soon become so in weak bodies; such are ale that is become vapid, or wine that is sharp or sour, &c. But we likewise take such aliments as are no less hurtful. Thus the milk given to weak infants often turns sour, and clogs the intestines with a cheese-like coagulum, which growing acrimonious by stagnation, corrodes and inflames their tender membranes, and from this cause numbers of infants perish. But if we consider what is taken under the article of sauces and pickles, before they are prepared, we shall find that they are of so pungent a nature, as to corrode even the outward skin; insomuch that it is even wonderful the stomach and bowels are not oftener inflamed; which would doubtless be oftener the case, if they were not defended with a thick and soft mucus throughout their whole internal surface. See Aph. 568. No. 1.

Medicines or poisons.] Resin of jalap softened by heat, firmly adheres to every thing it touches, and contains in itself so strong an acrimony as to excite the most violent pain in the abdomen, and over-purgings of dangerous consequence, unless it is corrected by a long trituration with sugar, or its tenacity destroyed with the yolk of an egg. Other acrid purges have often the same effects. But the greatest mischiefs will follow from arsenic.

And also from a sharp, putrid, &c.] That matter may be transferred from various parts of the body to the intestines, and thence evacuated by stool, ap-

appears from what was said upon a febrile diarrhæa, at Aph. 719; and if this matter is putrid, purulent, ichorous, &c. and translated to the intestines, it may easily corrode and inflame them by its acrimony.

A preceding violent convulsion.] All acrimonious substances taken into the stomach, or transferred to the intestines from other parts, may, by their irritation and stimulus, excite a spasm, or convulsion in the intestine, and by that means an inflammation. See Aph. 648. But sometimes such spasms in the intestines arise from very different causes, not reducible to any kind of acrimony we know. Thus the morbid matter, which being deposited upon the extremities, occasions the tormenting pain of the gout, if from an improper treatment, or weakness of body, the deposition of it on the usual parts be prevented or impeded, the most dreadful spasms will be frequently excited in the abdominal viscera; by which the intestines are often so constricted, that the circulation is intercepted, and a sudden and fatal gangrene ensues.

A P H. DCCCCLX.

AN inflammation once formed in these parts, contracts the intestine, shuts up its cavity, hinders the passage of the advancing contents; thereupon the part of the intestine above the seat of the obstruction, and even the stomach itself, are greatly inflated, distended, and inflamed; and by this means it produces a most acute, burning, and fixed pain, which extends itself through all the inflamed part; but when it is irritated by things conveyed to it, it occasions violent convulsions of the diaphragma and abdominal muscles, shuts up the belly, excites a vomiting of every thing taken, sooner or later, according
as

Aph. 961, &c. of the INTESTINES. 99

as the seat of the inflammation is higher or lower, occasions painful flatulencies, most severe gripes, with borborygmi, the iliac passion, a volvulus, an abscess, a gangrene, scirrhus, cancer, a most acute fever, extreme weakness from the intensity of the pain, and a very sudden death.

A P H. DCCCCLXI.

SO long as this disorder continues in its inflammatory state, it often imposes upon the ignorant under the name of an iliac passion, by whom it is ascribed to cold, to wind, or to flatulencies; and is treated with hot medicines and carminatives, a practice commonly fatal to the patient.

A P H. DCCCCLXII.

BUT it is easily known to be a true inflammation, from the acute continual fever that attends it, from the intense thirst, great heat, hard pulse, and burning pain, together with a flame-coloured urine, and sudden weakness.

When this disease arises from an inflammation of the intestines, it is usually preceded by a fever, which, raging but for a few hours, at length terminates in the iliac passion; and the like is observed in a pleurisy, quinsy, and other inflammatory disorders. But when a convulsion of the intestines produces severe pains without a previous fever, then the fever comes after the inflammation; and, at the same time, all those symptoms appear which usually attend an acute

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continual

100 Of an INFLAMMATION Aph. 963.
continual fever, and an inflammation; as heat, thirst,
&c. Sometimes too there is such a violent con-
striction of the anus, that even clysters cannot be
injected; which is a symptom observed both by
Hippocrates and Aretæus. As to the sudden weak-
ness, see the comment to Aph. 661, where we treat-
ed of febrile weakness.

A P H. DCCCCLXIII.

IF an inflammation invades the flexures of the
colon, it forms the distemper called a colic;
but if it seizes the extremity of the rectum, it is
generally taken for the blind piles; it is solved
by a mild, bloody, or bilious dysentery.

Although an inflammation, volvulus, and iliac
passion most commonly invades the small intestines,
yet we are certain, from observations, that the large
ones are also liable to the same maladies. Ruyfch
found a volvulus in the colon^a; and Hildanus, in
a boy who died of a violent iliac passion, found the
cæcum contracted and thrust into the ilium, where-
by this last was so shut up, that nothing could pass
from the small intestines into the colon^b.

When the rectum is inflamed, the same symptoms
arise which usually attend the blind piles; hence the
one is often mistaken for the other; yet a mistake of
this kind is of no great consequence, since both these
disorders require the same method of cure: however,
the acute fever which constantly attends every vio-
lent inflammation, will here be the principal distinc-
tion. But, as in men, the rectum is contiguous to
the neck of the bladder, a strangury is often pro-
duced by irritation, or compression, as Hippocrates
has observed; and the same symptom will also arise

^a Adver. Decad. 3. p. 17.

^b Observat. Chyr. p. 49.

from a swelling of the blind piles, which immediately ceases when the turgid hæmorrhoidal vessels break and discharge their blood. An inflammation in the rectum is more easily cured than one in the colon; as topical remedies, such as warm bathing and fomentations, may be immediately applied to the affected parts: besides, the disease may be longer sustained without danger, provided the rest of the intestines be sound. But when the inflammatory matter is resolved, and makes its way through the dilated extremities of the vessels, it is afterwards discharged by stool, though not without pain and uneasiness; for which reason it is said to be carried off by a dysentery; but by one that is mild, somewhat bloody, and bilious.

A P H. DCCCCLXIV.

AS soon as it is known by the signs enumerated at Aph. 959, and 960, that the intestines are inflamed, the cure must be immediately attempted while it is in its first stage, which is effected, 1. By copious and repeated bleeding, as in a pleurisy. 2. By a continued use of laxative, diluting, and antiphlogistic clysters often repeated, to the number of three, four, or more, in a day. 3. By continually drinking liquors of the same kind very warm, with a prudent addition of opium, and such things as are opposite to the particular cause of the disease. 4. By fomentations of the like kind applied to the abdomen, and chiefly by the application of young, live, and healthy animals. 5. By abstaining from all things acrid, and such as increase the motion of the blood, or are heating, either in the form of drink, ali-

ment, or medicine; and also by avoiding motion, and passions of the mind. 6. By persisting in the use of these things, until the disorder is totally removed, and does not return in three days.

3. All the relaxing, attenuating, and cooling remedies, directed for the cure of a pleurisy, are here also proper; but as a spasm commonly attends an inflammation of the bowels, the most emollient remedies are likewise required. For the same reasons opiates are recommended, as they most powerfully remove all spasmodic constrictions; but these are not proper unless bleeding and clysters have been premised. But as it was observed at Aph. 959, that this disorder frequently arises from different kinds of acrimonies; such remedies are to be given as are proper to correct the particular acrimony. Thus, the acid acrimony is to be corrected by absorbents.—The putrid acrimony by acids and acescents, especially when they are well diluted with water. But when the nature of the acrimony is unknown or doubtful, then watery, oily, mucilaginous, and emollient decoctions will always be serviceable, as they weaken all acrimony.

4. Every remedy that can ease the pain, and prevent the increase of the inflammation, are to be applied at the same time. This is what Aretæus also advises; and Celsus directs the application of warm cataplasms, and to be often renewed; and even to immerge the patient in hot oil, that all the parts may be relaxed as much as possible. But that natural warmth which exhales from the bodies of sound and healthy living animals laid upon the body, is here more especially beneficial. The cawl of an animal newly killed, and applied warm to the body is also an excellent remedy. Sydenham, in the cure of the iliac passion, ordered a live puppy to be laid upon the belly, and kept on for two or three days.

5. From

5. From what has been said of the cure of inflammation in general, it is apparent, that the softest remedies, and such as have no acrimony, are here only proper; and that the use of heating medicines must be very hurtful, as was before demonstrated at Aph. 961; and yet we read, that the most eminent physicians have used the more acrid medicines with wonderful success, especially purgatives, and many other things, to restore a free passage through the intestinal tube. This is a point that deserves our consideration.

For it is here to be observed, that besides an inflammation of the intestines, there is often some obstruction which blocks up the cavity of the intestines, and which must be removed in order to effect a cure. If this obstruction proceeds from an inflammatory swelling only, it is evident the medicines here recommended are proper, and that these alone must be given; because an irritation of the inflamed parts, by the stimulus of cathartics, or other acrids, will always do hurt. But if some obstructing matter blocks up the cavity of the intestines, whether that pre-existed before the inflammation, or was there formed while the inflammatory tumour streightened the intestinal tube, it must, in both cases, be removed. Moreover, if a volvulus be formed, that must be extricated to procure a free passage through the intestines. Now as the *ingesta* are protruded from the stomach down to the anus by the peristaltic motion of the intestines, physicians have attempted to remove these obstacles by stimulating cathartics, in order to increase this propulsive motion. *Peyerus* observed, that a volvulus, or intorsusception of the intestine, would unfold itself again by their peristaltic motion. Others have directed the use of the ponderous metals, that these descending through the cavity of the intestines might, by their weight, remove the obstructing obstacle; and in this way various means have been tried, sometimes with good effects, and

sometimes with bad. It will therefore be necessary to examine in this place, what reason dictates, and what experience has taught.

An inflammation of the intestines ought, at first, to be treated in the antiphlogistic method by bleeding, fomentations, emollient clysters, &c. Hippocrates drew blood from the head, and from the arms; put the patient in a tub of warm water, anointed him with oil, and applied warm fomentations. After this he endeavoured to evacuate the indurated faeces lodged in the rectum by means of a suppository; and at last injected a clyster. When these had no effect, he then ordered "wind to be blown into the body by a pair of bellows, to distend both the abdomen and the contracted intestines," &c.^a Trallian^b, treating upon the cure of this disorder, says, "that if it be a cold colic, or an iliac affection, without an inflammation, the cure by inflation will succeed; but when the intestines are inflamed, this method of cure will be not only useless, but even hurtful." He gives the same caution in respect to purges, when he says, "if the disease arises from an inflammation of the intestines, you must not administer purges, especially in the beginning, when the inflammation is yet crude: for those who in this state give cathartics, have done great mischief to their patients, and even occasioned their death." So likewise Aretæus^c, after bleeding, even till the patient faints, and after the use of clysters, fomentations, cupping, theriaca, &c. adds, "but if the pain neither remits, nor the wind or faeces discharge themselves, then it will be necessary to give the purging medicine called hiera." Sydenham following their method, gave a cathartic when the pain and vomiting ceased for two or three days^d. In another place^e, after copious bleeding,

^a Hippocrat. de Morbis, lib. iii.

^b Lib. x. cap. 1. p. 582.

^c Lib. ii. p. 106.

^d Sect. i. cap. 4.

^e Sect. iv. cap. 7.

p. 260.

he directs a lenient purge to be given the next day; but then the pain was neither so fixed, nor the vomiting so frequent as at other times. When he thought the stronger cathartics necessary, he then gave an anodyne to allay the spasms of the intestines. Vid. Schedul. Monitoria.

But cathartics have been administered in the form of clysters, with good success, after the use of antiphlogistic remedies; and Sydenham found the smoak of tobacco, blown into the bowels, the most effectual of all remedies. Hoffman determines nothing of this practice from his own experience, but affirms, that it opens the bodies of horses; and that the common people ease the severest colicky pains by swallowing the smoak of tobacco. Heister found this remedy so effectual in the cure of incarcerated ruptures, as to prevent the use of the knife, and has therefore contrived a proper instrument for the commodious administration of this remedy.

As to the use of the ponderous metalline bodies, authors differ greatly. Helmont boldly affirms, that no one can perish of the iliac passion, if they do but swallow leaden bullets. But if we consider that the intestine is dilated above the obstructed part, these heavy bodies will lodge there without pressing directly with their weight upon the obstruction. If there be also a volvulus of that sort, in which the superior contracted part of the intestine is received into the inferior dilated portion; these ponderous remedies may increase the disorder, by protruding the confined intestine further into the dilated part. Therefore *Sydenham*, with good reason, affirms, that these remedies are of little service, and are frequently the cause of considerable mischief. But the use of quicksilver, though likewise condemned by *Sydenham*, is yet applauded by many physicians of considerable note. *Van Heers* assures us, he often gave it without any damage, and that, in a moment's time, it ran through the bowels, bringing with it the ob-

structing

structing fæces. ^a *Zacutus Lusitanus* informs us, that many have been cured of the most desperate iliac passion by drinking three pounds of quicksilver in warm water. That it may be taken safely, if it speedily passes through the body, we are taught by numerous observations ; and perhaps it is safest when given in the greatest quantity ; for then it runs off more easily by stool ; but when it lies long in the body, and gets into the blood by the bibulous veins of the intestines, it may then produce very different consequences, and all the disorders arising from an abuse of quicksilver. But notwithstanding this, it ought to be tried in this dangerous disease, as it has been attended sometimes with happy effects.

But other remedies have been tried by physicians with success, which at first view seem rather to be hurtful. Hoffman ^b having in vain tried bleeding, emollient clysters, and various other medicines for violent pains of the abdomen, in a woman who had a suppression of the menses from a fright ; the physician who attended with him, proposed the drinking of cold water, to which he at last consented. Two cups of water were given several times a day, the body and feet being first well covered. A copious sweat ensued, and afterwards a comfortable sleep, with a removal of the pains in the abdomen ; and the same physician assured him, that he had often, in the same case, applied linen cloths dipt in cold water with wonderful success. The same celebrated author gives us a case of the like kind from *Septalius*. In the *Edinburgh Medical Essays* ^c there are several cases which confirm the success of this method of cure.

The ancient physicians sometimes likewise made use of this method of cure. Trallian ^d, in the cure of colics, arising from hot bilious humours, gave

^a *Observat. Med.* p. 37.
p. 335.

^b *Med. Ration.* tom. iv. p. 2.
^c Vol. v. p. 2. page 893.

^d Lib. x. page 585.
cold

cold water to patients who were of a strong habit, and whose viscera had no defect: and he even says, that he had successfully injected things actually cold, by the anus. Hippocrates^a recommends the pouring on plenty of cold water for a tetanus, in young men of a fleshy habit in the midst of summer; and the same likewise for an erysipelas not ulcerated^b. He even informs us, that convulsions are relieved, and pains removed by the affusion of much cold water^c. But in this disease there is both an obstinate spasm, and an inflammation of the intestines at the same time, with the most intense pain.

We now see the happy effects of bold practice in most desperate diseases; and if any one presumes to condemn the like as rash attempts, let him remember what *Celsus*^d formerly said, in treating upon the ancient method of giving cold water in fevers; "As it is impossible for the same things to be suitable to every body, those commonly who are not restored by a rational method, are relieved by temerity."—But it is a practice still more audacious to cut into the abdomen, pull out the intestines, and search for the seat of the volvulus, to replace the intestines again, and sew up the belly: yet this is a practice proposed by *Barbette*, rather than to give up the patient to certain death. In *Bonettus*^e we read of the operation actually performed by a bold young surgeon, and with the most happy event: and, not long ago the celebrated *Nukke* ordered the operation to be performed, by an expert surgeon, on a woman forty years old, who lived above twenty years afterwards; and *Cælius Aurelianus*^f tells us, that *Paraxagoras* ordered the same operation, and even the intestine to be cut asunder, and sewed up again. But who can persuade to the practice of so cruel an operation, but in the most urgent necessity?

^a Aph. xxi. Sect. v.^b Aph. xxiii. Sect. v.^c Aph.

xxv. Sect. v.

^d Lib. iii. cap. 9.^e Anat. Pract. tom. ii.

page 228.

^f Acut. Morbor. page 244.

6. But although the pains are removed, and the fever subdued, by the methods hitherto directed; yet we are to consider, that the affected intestine may still retain such a degree of sensibility, as that the pain, spasm, and inflammation may easily return again, by the slightest irritations, either from acrid aliment, or from such as are difficult of digestion. *Sydenham* was aware of this, and therefore recommends a very thin diet, intirely of chicken broths, and in such quantity as will barely suffice to maintain life. *Celsus* also recommends the like low diet^a.

A P H. DCCCCLXV.

IF this inflammation is not cured by proper remedies, and continues to rage with the same violence longer than three days, in the room of a burning and tearing pain, there follows an irregular shivering throughout the body, without any manifest cause, with a dull pain and heaviness in the affected part; it will be a sign that an abscess is forming there; from whence, within fourteen days, there will be a discharge of pus; which, if it flows into the cavity of the abdomen, it there produces all the evils arising from an abscess of the liver, enumerated at Aph. 939; but if it flows into the cavity of the intestines, it occasions a purulent dysentery, more or less violent, and of longer or shorter continuance, according to the nature of the ulcer there formed. From this cause the coats of the intestines are often voided entire by stool, and a tabes is also frequently produced.

Since an inflammation and suppuration are most frequently seated in the cellular membrane, which

^a Lib. iv. cap. 13.

anatomists have demonstrated in the intestines; it sometimes happens that, by a suppuration of this membrane, the internal villous coat is separated from the rest, and discharged by stool, resembling in figure the intestinal tube, to the great surprize of the patient and his attendants. *Aretæus*^a takes notice, that the same happens likewise in dysenteries; and *Tulpius*^b and others furnish us with like observations, which serve to confirm that of *Aretæus*; for the inner coat of the intestinum rectum was cast off, and the patient afterwards recovered. But that the like separation may happen throughout the whole tract of the intestines, seems highly probable, although the separated membranes rarely resemble an hollow tube, but appear in the form of a healthy mucus; which, if put into clean water, plainly shews a membranous and vascular structure. The famous Symson saw, in the body of a person who died phthysical, and had also a fistula in the anus, that the villous coat of the intestines was, in several places, wanting, and many of the abraded fragments found in their cavity.

A P H. DCCCCLXVI.

AS soon as it is known that an abscess is formed, every kind of aliment is to be forbid that produces much hard, thick, and acrid fæces. The patient is to be fed only with broths, in which the mild detergent roots are boiled; balsamic and detergent decoctions are likewise to be drank in large quantities, and injected in the form of clysters, or the medicinal Spa-waters are to be drank in great quantities, until the cure is compleated.

^a Lib. ii. cap. 12. page 61. ^b Obs. Med. lib. iii. cap. 17.

When an abscess is formed in the intestines, the method of cure, directed at Aph. 402, is to be pursued. But when, from an alleviation of the pain, and a discharge of matter by stool, we know that the abscess is broke, we are then to deterge the ulcerated parts, by infusions of the vulnerary plants, with honey; such as agrimony, veronica, golden-rod, hypericum, and the like. But above all things, acrid aliment and drink, and whatever produces gross fæces, are to be avoided. Flesh broths therefore afford the best nourishment; as they support the strength without loading the intestines with indurated fæces. For the same reason whey is serviceable, while milk itself cannot be used, because it so readily turns sour, and produces gross fæces; as appears in infants, who are nourished only by milk. In the flesh-broths may be boiled the roots of scorzonera, vetches, succory and the like; a form of which may be seen in the *Materia Medica*, under the present aphorism; but then these broths must be strained, that nothing gross may get into the intestines before the ulcer is healed. Fresh whey and Spa-waters, will be necessary to wash out from the blood the absorbed particles of matter, and at the same time dilute and soften the other humours conveyed into the intestines, more especially the bile, that the ulcerated part may suffer as little irritation as possible. When the ulcer is cleansed, chalybeate waters will, by their astringency, promote the cicatrization; and when, for several days, no matter is discharged by stool, nor any pain felt in the belly, more solid food may be gradually given; such as rice, barley, panada, the flesh of young animals, &c. and at length the patient may return to his usual diet.

A P H. DCCCCLXVII.

BUT if the inflammation arises from the violent causes enumerated at Aph. 959, and produces the severe symptoms of Aph. 960, it may easily form a gangrene in the affected part, which will afterwards be fatal.

See Aph. 960.

A P H. DCCCCLXVIII.

THIS approaching gangrene we may easily foresee, from the violence of the causes and symptoms, if at the same time there be no signs of a mild resolution, or of a cure.

A P H. DCCCCLXIX.

THAT a gangrene is always formed, we know, from the circumstances mentioned in the preceding aphorism, and from a sudden remission of the most acute pain without any manifest cause; the pulse, in the mean time, weak and intermitting, with cold sweats; a dysentery, with fetid, cineritious, ichorous, livid, and black stools; an insensible discharge of the faeces, and soon after a quiet and easy death.

If the pain be most acute, and fixed in one certain place, with a violent fever and obstinate constipation of the bowels, while every thing taken into the stomach is returned by vomiting; or if the cure was neglected in the beginning, or no relief obtained from it, we thence conclude that the inflammation tends

112 Of an INFLAMMATION Aph. 970, &c.

tends to a gangrene. See Aph. 904. But a cadaverous countenance, a leaden colour of the lips, a coldness of the extremities, anxiety, an inflated belly, an extreme weak and quick pulse, are certain signs of approaching death. *Hippocrates*, with very good reason, says, "That great coldness of the extremities, after a violent pain in the belly, is a bad or fatal sign^a". But the best physicians have always feared the worst consequences when, with these signs, the bowels, before constipated, become loose. Hence *Baglivi*^b has established the following practical axiom; "If a flux of the bowels comes after a violent iliac passion, the patient will die in a few hours after; for all the parts of the intestine are then mortified; from whence proceeds the fatal flux. If also a tumour or distention of the belly attends an iliac passion, with a plentiful discharge of flatus downwards, the patient will soon die. The same observation is confirmed by *Tulpius* and others^c."

A P H. DCCCCLXX.

BUT this disease, when it comes to a gangrenous state, rarely admits of a cure; for it ought to have been cured before; but if any thing can do good, it must be by pursuing the method directed at Aph. 966.

A P H. DCCCCLXXI.

BUT if the disease terminates in a scirrhus, there arises a disorder of a quite different nature, which ought to be clearly distinguished and understood.

^a Aph. xxvi. Sect. vii.

^b *Prax. Medic.* page 110.

^c *Observ. Med.* p. 161.

The causes producing a scirrhus from inflammation, were before declared at Aph. 392. The signs of one here present, are enumerated in the following aphorism.

A P H. DCCCCLXXII.

IF therefore an inflammation of the intestines, with the conditions necessary to form a scirrhus, mentioned at Aph. 392, and continues long, neither rising to the highest violence, nor yet is solved by a resolution, or by medicines, or by a suppuration; but leaves in the part affected a stupor, weight, and distraction of the parts; there is just grounds to suspect that a scirrhus is formed there.

A P H. DCCCCLXXIII.

WHICH following its own nature, and producing its usual effects in this part, creates many grievous and obstinate disorders; such are chiefly a stupor, weight, and continual increase of its bulk; hence an angustation of the cavity of the intestine, a stagnation of the fæces, and the chyle; the action of these upon the resisting part, the matter of both becoming highly putrid by stagnation; hence again, an occlusion of the intestine, a detention of the *ingesta*, an iliac passion, a volvulus; or, from an acrid irritating matter, a dry dysentery, convulsions, a singultus, vomitings, continual pain, a fever, a wasting, an atrophy, and at last death.

314 Of an INFLAMMATION Aph. 974, &c.

That a scirrhus may arise in the intestines, is evident from the observations of Hollerius^a and Ruysch^b; and it is highly probable that scirrhus swellings more frequently lurk there than is commonly imagined.

A P H. DCCCCLXXIV.

MEDICINES of any kind are here of little use; but the diet directed at Aph. 966, may be observed; and thus the disorder may be long supported without any great hurt to the patient.

A P H. DCCCCLXXV.

BUT if the scirrhus formed in this part, is known to result from causes capable of producing a cancer, the patient is then in a most calamitous state, and absolutely incurable; which may be known from what is said at Aph. 498, compared with the nature, functions, and nervous structure of the intestine; but what chiefly afflicts the patient is, an highly acrid, continual, and obstinate dysentery, that scalds, erodes, and consumes every part through which it passeth, attended with violent convulsions, and pains greater than human patience can bear, till at last death puts an end to his misery.

A P H. DCCCCLXXVI.

IF, upon the first appearance of this scirrhus, it be treated in the manner directed at Aph. 974, it will greatly contribute to prevent the

^a De Morb. intern. page 325.
Ob. 95, 96.

^b Obser. Anat. Chyrur.

evils enumerated in the preceding aphorism. But if, to remove the scirrhus, acrid remedies are imprudently used, especially strong purges, then a cancer will there arise, and rage with uncommon fury. In this case drinks of whey only are to be given, the diet is to consist of mealy broths, or of flesh broths, with the yolks of eggs; the most emollient clysters, prepared only from a decoction of linseed, the leaves of the officinal nightshade, or the heads of white poppies, are to be injected, and medicines of the most demulcent kind, that are anodyne, and not easily convertible into a state of acrimony.

When we know that a scirrhus is formed, nothing remains but to prevent its turning into a cancer. Yet such patients being always troubled with a sense of an oppressive weight in the abdomen, commonly urge the physician to prescribe purges to carry off the troublesome load; and if he refuses to grant their imprudent request, they often apply to quacks, who give the most violent cathartics and emetics, by which the scirrhus is soon converted into a cancer. In this case nothing can be done but to render the disorder more easily tolerable by mitigating the symptoms. All the ingesta, therefore, ought to be soft, and free from acrimony. Pure water is one of the best drinks, or clarified whey from new milk; and, during the use of the latter, the patient should take absorbents finely levigated, that, if the whey sours in the *primæ viæ*, it may be immediately corrected. The yolks of eggs will also be proper in flesh broths, together with the soft mealy grains. But to weaken the ichor that drains into the intestines, the most emollient clysters, with anodynes, are to be injected; for by these the offending acrimony is diluted, and the coats of the in-

testines are lined with the soft mucilage. — *Trallian*^a seems to have met with a cancer of the intestines, attended with a very bad dysentery, and *Salus Diverfus*^b saw one in the *colon*, which tormented the patient for many months, who at last died of an *iliac passion*.

A P H. DCCCCLXXVII.

DOETH it not hence appear, why in practice we so frequently meet with pains of the œsophagus, the upper orifice of the stomach, liver, spleen, pancreas, ilium and colon, so severe, fixed, intolerable, and incurable? Does it not also appear, that in every true iliac passion, there is some physical or mechanical cause that absolutely hinders the profusion of the intestinal contents, whatever it may be, whether owing to some fault in the fabric of the intestine, or to the humours lodged in its cavity; which have been found of many different kinds? And also how many different kinds of dysenteries there may be, and how wonderful they are in many respects? How unjustly do we accuse, in these disorders, some particular kind of hecical acrimony of the humours, for the removal of which imaginary cause, pernicious medicines are often given? Does not the administration of cathartics in pains of the intestines, require great prudence and caution? And what the nature is of that incurable hypercatharsis which frequently follows, in some patients, the use of purgatives? How various is the method of curing dysenteries! and what a variety of remedies do they not require? Is it not vain, fallacious, and pernicious, to cry up one medicine,

^a Lib. viii. page 433.^b De affectib. Particul. page 280.

however excellent, for the cure of all kinds of fluxes? or even to recommend one universal method of cure? And an infinite number of such particulars.

We have already shewn, when we treated of a scirrhus quinsy, at Aph. 797, that when the œsophagus becomes scirrhus, or is compressed by the like tumours in the adjacent parts, it may be gradually so streightened, as at length to intercept both meat and drink; hence a lingering and miserable death. We likewise meet with very troublesome cardialgias, inflexible to all remedies, and only relieved by the use of lenients. There is a wonderful diversity in these cases. I have known some patients easy enough upon an empty stomach, but after eating they have been miserably tormented for three or four hours. Others again have been worse with an empty stomach. I have known women daily troubled with pains in the stomach, that have left them when with child, and have returned again after they were delivered. But as the stomach changes its situation when it is full, and the gravid uterus displaces most of the abdominal viscera; may not scirrhus tumours less compress and distract, by their weight, the parts adjacent, and those to which they adhere, while their weight is sustained by the distended uterus? And may not the like also happen with respect to the full stomach? This, at least, seems very probable, since we learn, by the dissection of dead bodies that scirrhus swellings and ulcerated cancers have been the causes of such painful and stubborn maladies.

That in every true iliac passion, &c.] Sydenham would have the disease properly called the iliac passion, to arise from acrimonious humours thrown into the stomach and intestines, by the raging of a fever; and that arising from indurated fæces, and other such causes, he terms a spurious one. But *Hippocrates* and *Galen* mean, by this term, such an inflammation

of the intestines as blocks up their cavity, so as totally to intercept their contents; which is the most eligible definition, and ought therefore to be retained. Now such an obturation of the intestinal tube may arise either from a tumour in the substance or membranes of the intestine itself, or from any tumour compressing their sides, or from impervious matter collected in their cavities; and if, in any of these circumstances an inflammation arises, the disorder is called *ilcus*, or the iliac passion. But the cavity of the intestines has been found blocked up by various other bodies, in those who lead a sedentary life, and live on aliments that are difficult to digest, and more especially when the bile becomes inert; for an obstructing matter is often accumulated in the duodenum, which is narrow and wrinkled; and there hardening, at length plugs up the cavity of the intestine, and produces an iliac passion: a case of this kind came under my own observation. I observed this disease once arose in a girl from eating a large quantity of plums, and swallowing all their stones; from which she happily recovered, by discharging an incredible quantity of these stones. We meet with a like case in *Bonnet's* collections, which proved in the end fatal.

And also how many different kinds of dysenteries, &c.] It was said, at Aph. 721, what a dysentery is. Every acrimony corroding and irritating the intestines, whether from things swallowed, or from bilious, atrabiliary, ichorous, or cancerous, &c. humours derived to them, may produce a dysentery. Hence it appears how different dysenteries may be in respect to the causes that produce them. But these causes have sometimes a wonderful subtilty, and spread an invisible contagion that infects those who are in health. Whole armies have been seized at once with this distemper, when the pre-disposing causes have not manifestly appeared.

How

How unjustly do we accuse, &c.] In a wasting from hectic fevers much good may be expected from a milk diet, and riding on horseback. But if a cancerous ulcer lurks in the stomach or intestines, the disorder will be increased by riding. And even milk, as it is, may produce indurated fæces, and will be inconvenient, although, in other respects, it is bland and useful. And as the fæces are here intolerably putrid, if we attempt to correct them by strong acids, the painful parts will be greatly irritated.

Does not the administration of cathartics, &c.] It is customary to accuse sharp humours, or accumulated fæces, as the cause of all pains in the abdomen; from whence the unskilful believe, that nothing can be more useful than purges to expel the offending matter. But if signs of an inflammation attend the pain, it must be evident, from what we have said, how dangerous purges are before bleeding, and other suitable medicines to abate the inflammation. The same caution is also necessary in chronical pains of the abdomen, since they frequently arise from a scirrhus, which by irritation easily degenerate into a scirrhus.

And what the nature is, of, &c.] - An hypercatharsis in this case, usually arises from a scirrhus that is ready to turn into a cancer by being irritated with purging medicines; and then the continual drain of acrimonious or cancerous humours incessantly erode and irritate the intestines; whence a continual purging, that lasts until the patient dies.

How various is the method of curing, &c.] As the causes of a dysentery are various, so ought the method of cure. If it arises from acrid and putrid bile, those remedies are proper which evacuate both upwards and downwards, provided the viscera are sound: but if these humours are rejected, either by nature or art, the excoriated intestines excite a troublesome tenesmus; which is to be cured by the most emollient decoctions, by armenian bole, terra figilata,

lata, and the like obtunders of acrimony, joined with opiates. Sometimes the dysentery requires bleeding, and cooling remedies, if it be conjoined with inflammation. But if the liver, corrupted by chronical diseases, shall discharge its ichor into the intestines, a vomit often occasions a fatal hypercatharsis. Or if it arises from the sanies of a cancer lodged in some of the viscera, a palliative and demulcent cure is only beneficial. — If a healthy person is infected with a dysentery from the effluvia that proceed from dying persons, all the powers of the body instantly languish. In this case rhenish wine, or vinegar, either alone, or medicated with the most penetrating aromatics, will be an efficacious remedy; even vinegar, diluted with warm water, and injected by way of clyster, is often equally beneficial. Sour whey, given plentifully, both as a drink and in the form of clysters, is of great use. But when the dysentery springs from an acrid acrimony in the bowels of weak infants, absorbents are the principal remedies. Hence it is plain there can be no specific remedy for all dysenteries, and that a safe cure can only be deduced from a knowledge of the causes.

Of the A P H T H Æ, or T H R U S H.

A P H. DCCCCLXXVIII.

BUT as in many acute diseases, attended with inflammations of the viscera, there arise aphthæ, we must now briefly treat of them.

The word aphthæ is indeed found in the writings of the ancient physicians, but they do not seem to have always understood by it the disease of which we
now

now treat. They frequently give this appellation to small ulcers seated in the internal parts of the mouth, which often appear solitary and distinct; and these have a white or yellow speck in the middle, while their circumference appears red, inflamed, and painful. If we read *Ætius's* ^a description of aphthæ, it will appear, that he means those little ulcers which are common to infants, and for the most part very easily cured by gentle astringents, which are not proper for the cure of aphthæ that arise in acute inflammatory diseases, as will hereafter appear. But the description of aphthæ given us in the Lexicon of *Julius Pollux* ^b well enough agrees with ours; for his words are, "An aphtha is a superficial exulceration" and abscess, which appear white on the tongue, "tonsils, uvula, or throat." This description includes both kinds of aphthæ, namely, those remarked by the ancients, and those likewise of which we now treat.

A P H. DCCCCLXXIX.

THESE aphthæ are small, round, superficial ulcers, seated in the internal parts of the mouth. In compliance to custom, they are here called ulcers: but, properly speaking, they are rather a sort of eruptive pustules, that rise above the surface of the internal parts of the mouth, from whence they fall off, leaving the parts to which they adhered in their natural state.

^a Lib. viii. cap. 42.^b Lib. iv. cap. 25. sec. 200. p. 470.

A P H. DCCCCLXXX.

FROM an accurate examination of these aphthæ, they appear to be exulcerations of the extreme emissary ducts, by which the saliva and mucus are secreted, and conveyed into the mouth, formed by an obturation of these canals by a thick, viscid humour conveyed thither.

In our Physiological Lectures it was demonstrated, that a great quantity of thin juices are discharged from the internal surface of the mouth, in order to be mixed with our aliments in mastication; and there are besides numberless mucous cryptæ, or cells, in the back of the tongue, tonsils, pharynx, œsophagus, &c. which secrete a thick mucus for the lubrication of these parts. All this is confirmed by anatomical injections. Aphthæ therefore seem to arise from a morbid tenacity of this mucous humour, so that it cannot pass through the ultimate extremities of these ducts, but there stops, and blocks up the excretory openings into the mouth, while the force of the humour urging from behind, distends the ends of the vessels above the surface, and thus produces the aphthæ.

A P H. DCCCCLXXXI.

APHTHÆ are therefore seated in all those parts where these emissaries discharge themselves, and consequently may be in the lips, gums, internal side of the cheeks, tongue, palate, fauces, uvula, œsophagus, stomach, and small intestines, where they are much of the same kind.

Aphthæ

Aphthæ appear in all the parts enumerated in the text, and are therefore easily distinguished from that fordes which sometimes incrusts the tongue in acute diseases. But aphthæ never cover the tongue only, without affecting likewise the other parts of the mouth, more or less; yet this is not sufficient to assure us, that they are also dispersed through the stomach and intestines. But when they begin to fall off, we see large fragments discharged by spitting, and the like kind also by stool, and in such quantities, as cannot be supposed to come from the fauces and œsophagus. *Ketclær*^a collected in a few Days such quantities of those apthous incrustations from the spittings and stools as have filled several basons. But this will appear the less wonderful, if we consider, that when some fall off, others sprout up again, and thus repeatedly for several times. Whence we may conclude, that aphthæ are also seated in the stomach and intestines, as well as in the mouth, &c.

A P H. DCCCCLXXXII.

A P H T H Æ are most common to the northern nations, to those who live in low or marshy countries, in warm and rainy seasons; to infants, and to old people.

It is certain this disease is hardly known in hot countries. *Ketclær*^b was of opinion, that the human body being more open in the warmer regions, the matter of this disease was carried off by perspiration and sweat. And he likewise affirms, that copious sweats and urines render the aphthæ more safe and mild. Perhaps it may be also remarked, that in regions where the aphthæ do not appear, the red and white miliary eruptions are frequent. Is there not then a humour here deposited upon the external skin,

^a De Aphthis. p. 15.^b Ibid. p. 30, 31.

like that of the aphthæ in the mouth and primæ viæ? Certain we are, that miliary eruptions often attend acute and continual fevers; and there is also a disagreeable smell, resembling that of vapid vinegar, diffused through the patient's apartment; which sort of smell I have often observed in aphthous incrustations. The white miliary eruptions seem to be filled with a pellucid liquor, projecting above the surface of the cuticle, which dry up, scale off, and often return again. Many like circumstances are observed in the aphthæ; for they are always preceded by an anxiety about the præcordia, a weakness, and a slight drowsiness. The same symptoms also precede the miliary eruptions, which afterwards disappear. Sometimes the miliary eruptions disappear suddenly, so do the aphthæ; but then the fever returns with violence, with an oppression about the præcordia, which cannot be relieved until the aphthæ come out again.

The aphthæ in children a few weeks after their birth, are so favourable, as seldom to require the advice of a physician; but in the continual fevers of old people, they often prove very dangerous.

A P H. DCCCCLXXXIII.

BUT before the aphthæ appear, they are usually preceded by a continual putrid fever, or by an intermittent that changes into a *continual*, beginning with a diarrhæa, or dysentery; a violent and continual nausea, vomitings, loss of appetite; great anxiety about the præcordia, that frequently returns; a great weakness, and a considerable evacuation of some kind of humour; a stupor and dulness, a continual drowsiness; and a sense of weight and pain in the stomach.

These

These are the symptoms which usually precede an eruption of the aphthæ, and also the signs which indicate the degree of danger that may be feared from them.

It is certain, if we exempt new-born infants, that aphthæ rarely appear without a continual fever; but they most frequently attend autumnal fevers that are remitting and readily degenerate into continuals; or those that in the beginning are of the continual kind, grow afterwards more moderate, and assume the type of an intermittent. — But aphthæ more frequently follow after fevers that begin with a diarrhæa or dysentery, as Sydenham has observed; especially when a hot regimen has been used, or the evacuation of the morbid matter checked by the use of astringents.

A violent and continual nausea, &c.] See what has already been said of a nausea at Aph. 642.

Great anxiety about the præcordia, &c.] All critical commotions are attended with great anxieties and restless agitations of the body, as was observed at Aph. 633. That this deposition of the morbid matter upon the internal parts of the mouth and alimentary passages, from whence the aphthæ arise, is critical, we are assured by a number of observations. I have often seen the aphthæ break out on critical days, by which the fever has been considerably lessened; and I have observed them to be more dangerous when they have appeared on some other day of the disease. *Ketelaer*^a imagined the signs of crises to be obscure and uncertain, and therefore presumes to affirm, that perfect crises very rarely happened in Zealand; yet he was obliged to confess, that the aphthæ which arose before the seventh day, were much more troublesome and fatal than those which arose upon the seventh or ninth day, and condemns those which appeared before the matter of the disease was concocted.

^a De Aphthis. pag. 19.

Great weakness.] Since aphthæ appear when the disease is far advanced, and are often preceded by diarrhæas, dysenteries, or other copious evacuations, the patient must be greatly weakened before the eruption.

A considerable evacuation of, &c.] Especially of those by which the most fluid humours of the body are carried off. Thus I have often observed the aphthæ appear in the last stage of a pulmonary consumption, after nocturnal sweats have been a long time endured.

A stupor and dulness, &c.] *Ketelaer*^a observes, that these symptoms precede the aphthæ, and that these signs very rarely fail; so that the nurses immediately presage their appearance when they observe the patient to be dull and sleepy. For as the matter which forms the aphthæ is conveyed, together with the lymph, through very small vessels, and at the same time produces such a lentor in the lymph, that it cannot pass through the ultimate extremities of the vessels; it is no wonder, that this matter lodged in the whole mass of humours, should cause an immeasurability of the very thin lymph. And it was demonstrated before at Aph. 704, that from this cause a febrile coma may arise.

A sense of weight and pain about, &c.] More especially when the aphthæ infest the stomach and œsophagus before they appear in the mouth and fauces. I have often observed likewise, that a singultus has preceded the appearance of the aphthæ in the mouth, which seems to be occasioned by an irritation of the upper orifice of the stomach.

^a Pag. 28.

A P H. DCCCCLXXXIV.

AT the beginning of the eruption it is usual for the pustules to appear here and there, sometimes first in the tongue, the corners of the mouth, the fauces, &c. without any constancy as to the place; and these aphthæ are almost always of a good kind. Sometimes they appear first in the lower part of the fauces, seeming to ascend from the œsophagus, in the form of a thick, white, and shining crust, like fresh lard, sticking very close, and gradually ascending: this is almost the worst sort of aphthæ, and for the most part fatal. Sometimes the whole cavity of the mouth, on every side, even to the extremities of the lips, are covered with hard, thick, compact, and tough incrustations; and from these two the patient rarely recovers.

Here are enumerated those signs which shew the danger of the appearing aphthæ, in order to form from thence a prognosis of the event, which is to be taken from the part where the aphthæ first break out, and from the different thickness of the aphthous incrustations. If then they appear scattered here and there, it is a good sign that seldom deceives. But sometimes it happens that the aphthæ break out sparingly, and dispersed in the internal parts of the mouth, but are numerous and thick in the more interior parts. The constant sickness and hiccups, with a pain and weight about the stomach, will sufficiently point out, to the attentive physician, the danger of aphthæ appearing in this manner. Besides, in this case, the vital powers are sometimes so depressed as to be unable to throw out the morbid matter upon these

128 Of the A P H T H Æ, Aph. 985, &c.

these parts, which is often observed in persons of an advanced age; and in them the quick and weak pulse plainly shew, that these are only fruitless efforts of nature sinking under the disease.

When the aphthæ first appear in the lower part of the fauces, and thence gradually ascend to the mouth, it is a sign that the primæ viæ are filled with them; and therefore all the bad consequences to be enumerated at Aph. 988, are to be feared.

When the whole cavity of the mouth is covered with hard and thick incrustations, it is a very bad presage; for here fresh aphthæ sprout up, which are cemented to the former, grow more hard and dry, and strongly resist a salutary separation. Hence the patient becomes unable to swallow, and is at length suffocated.

A P H. DCCCCLXXXV.

THE colour of these apthous incrustations is various; for they are either of a pellucid white, like pearls, or of an entire white, from the great thickness of the crust; or else tawny, yellow, livid, or black; the malignity of which colours increases in the order they are here enumerated; so that the first is the best, and the last the worst.

A P H. DCCCCLXXXVI.

WHEN the aphthæ have adhered sometime, they usually loosen below, give way, and fall off in fragments; and thus by degrees, and successively, all the parts affected are cleared of the incrustations. But this separation is performed in some kinds sooner, in others later.
Some

Some sprout out again immediately, others slowly, and others not at all. Sometimes the succeeding aphthæ grow as thick as the former, and even thicker. From whence again appears both the degree and time of danger.

If the vital powers are sufficiently strong, the fluids urging the extremities of the obstructed canals will throw off the aphthous crust, and the sooner, if the mouth be continually fomented with emollient and deterging gargles. But the separation of the aphthæ has no certain fixed time; for I have known them thrown off within twelve hours; and sometimes they firmly adhere for many days. If the seats of the deciduous aphthæ appear clean, red, and moist, they then either return no more, or very scantily; but if they appear dry, it is a bad sign; since they often return as thick as before, provided the vital powers are strong enough to expel the matter of the disease. If they are weakened, great anguish usually ensues, and death soon follows. Ketslaer^a observed this renewal of the aphthæ, for six, seven, or more times; which agrees also with my own observations.

But the deciduous aphthæ afford variety, as to their prognosis; for those which fall off the soonest, are the safest, although they repullulate anew. This indeed denotes the quantity of the matter to be copious, but as yet moveable, that the vital powers are sufficiently strong, and the vessels still pervious. But when they fall off slowly, we conclude that the matter of the disease is more tenacious, the vital powers defective, and the subjacent vessels less pervious; from all which great danger is denoted. But when there is a considerable interval of time betwixt the deciduous and sprouting aphthæ, the matter of the dis-

^a Ibid. page 21.

130 Of the A P H T H Æ, Aph. 987, &c.
ease is only in part subdued; and therefore we foresee that the disorder will be tedious and liable to frequent relapses, with which the patient must struggle before he can recover. When the aphthæ sprout up again equally or more thick than at first, there is reason to fear that the vital powers are not able to discern and separate the morbid matter; and then, as the incrustations dry up, without falling off, the newly repullulating aphthæ adhere to them, and produce all the mischiefs enumerated at Aph. 984.

A P H. DCCCCLXXXVII.

HAVING described the seat, the nature, the cause, and symptoms of the aphthæ, we may thence understand their genius, and likewise easily derive their effects and consequences.

A P H. DCCCCLXXXVIII.

FOR when an apthous crust covers over the whole surface of the parts, enumerated at Aph. 981, it then takes away all sensation from the nerves; whence the patient loses his taste; it hinders the egress of the fluids through their emissaries; whence a driness, a dilatation of the subjacent vessels, a putrefaction of the stagnant liquids, and an inflammation of the parts themselves. It shuts up the orifices of the lacteals, by which the entrance of fresh chyle, drinks, and medicines is prevented, and all the evils produced that can arise from a want of bodily nourishment, and at last death itself. When the incrustations fall off, there follows a great discharge of humours through the now dilated

dilated and open vessels, from whence a perfect salivation; a diarrhæa, which is of service, if the aphthous crusts do not return again, but pernicious if they do; the painfulness of the inflamed parts now laid bare, often occasion a discharge of clear blood; whence a bloody spittle, and bloody stools: but if all these particulars are applied to the stomach, to the emissary ducts of the liver, pancreas, and intestines, we may thence learn the infinite number of evils that may arise from one disease; so that it would be needless to pursue its prognosis any further.

The disorders arising from aphthæ are of two kinds, either such as arise from the incrustation of the primæ viæ, or from the pain and irritation that remains after that is thrown off.

There follows a great discharge of humours, &c.] If we consider that this discharge of humours may be from the whole tract of the primæ viæ, the reason will be evident why a diarrhæa ensues, and why a sudden and profuse discharge of fluids is often fatal to patients who have long languished under this disorder, when both the patient and the physician had formed better expectations. But if the diarrhæa be moderate, and the patient's strength, as yet tolerably firm, it is one of the best signs; because it carries off the matter of the disease, now easily expelled through the open and dilated mouths of the vessels, and then the aphthæ do not return. But if they sprout out again, it denotes that the same morbid matter still remains, and in such a viscid condition as not to pass through the open ends of the dilated vessels.

But if all these particulars are applied to, &c.] In the internal parts of the mouth, we can see what changes arise after the separation of the aphthæ; but

they also arise in the primæ viæ, and afterwards fall off. If now we consider that the common duct of the bile and pancreatic juice may be so obstructed by the aphthous incrustations, as to transmit neither of these important humours into the intestines, we may thence easily apprehend what great anxieties must arise about the præcordia. But when the obstructing crust is once separated, and a free passage made to the now accumulated bile, rendered more acrid by stagnation, we need not wonder that the most severe gripes should arise in the almost excoriated intestines, and produce most dangerous diarrhæas and dysenteries. For this reason many physicians have condemned the use of cathartics in the aphthæ, because they have sometimes proved fatal in a few hours; which probably was not owing to the purge only, but to the large quantity of collected bile and pancreatic juice rushing suddenly into the intestines, and irritating their naked surface.

A P H. DCCCCLXXXIX.

BUT if these ulcerated incrustations be very tough, thick, broad, and compact, then is the subjacent suffocated, inflamed, suppurated, and gangrenous flesh changed into a dreadful ulcer, which sometimes cuts through the os palati, even to the covering of the bone: but what disorders may arise in the stomach and intestines from the same source, is self-evident.

When we treated of a gangrene, at Aph. 423, it was observed, that the febrile matter was sometimes deposited upon particular parts, whose vitality it quickly destroyed. Now as the aphthæ arise from the matter of a fever deposited on the surface of the primæ viæ, and there sometimes proves very malignant, it is evident, that the extremities of the vessels being
stuffed

stuffed with the viscid humour, form together a dead crust, which destroys their vitality, and thereby disposes the aphthæ to a true gangrene.

The like danger is to be feared also when the aphthous incrustations do not speedily fall off, as was observed at Aph. 984. If such dense and firmly cohering aphthæ occupy the arched roof of the mouth, the membranes which invest this part, are frequently destroyed; and when the gangrenous incrustations afterwards separate, the os palati appears naked, turns carious, and occasions the most troublesome disorders.

A P H. DCCCCXC.

THE best method of curing this disease is,
 1. To raise the internal impulse of the vital humours towards the affected parts, and so to regulate this impulse, that by a proper supply of liquids the ulcerous incrustations may be resolved, relaxed, and fall off. This intention is answered by drinking great quantities of warm, diluting, resolving, and deterging decoctions. And because in the worst sorts of aphthæ the lacteals are so obstructed, as not easily to admit these liquids into the blood, external fomentations, vapours, and baths of the same ingredients, are here of singular benefit; but the best aliment is panado, with the addition of a little wine and honey. 2. To promote the separation of the aphthæ, easily and quickly; which is done by fomentations, gargles, and clysters, made of warm, relaxing, emollient, deterging liquors, which moisten the parts by adhering to them, and at the same time resist putrefaction. 3. To administer ano-

dyne, demulcent, and gentle corroborating medicines as soon as the aphthous crust begins to separate. 4. To administer corroborating drinks as soon as the fever abates, the urine begins to separate, and the pulse becomes free and easy. 5. To administer some corroborating purge towards the end of the disease.

1. The whole history of the aphthæ shews, that a morbid matter is separated from the blood, and deposited on the alimentary passages; and therefore, in the cure, we ought to be careful not to hinder this effort of nature. For when the eruption of the aphthæ is by any means checked, the fever instantly increases, the anguish becomes extreme, and many other dangerous symptoms ensue, which are not to be relieved until the aphthæ appear again. The matter of the aphthæ therefore ought to be rendered moveable, and the vessels disposed to give it an easy passage. The first indication is obtained by moderating the fever, so as to be neither too high nor too low. See Aph. 609 to 611, where we have given the signs for distinguishing these bounds, &c. The second, by a plentiful use of diluting, attenuating, and deterging drinks. A formula of one is given in our author's *Materia Medica*, under the present aphorism.

But if the surface of the primæ viæ are so lined with aphthous incrustations that nothing swallowed can be absorbed by the lacteals, there is then no way left, but by baths and fomentations applied to the surface of the body, to introduce, as much as one can, diluting and attenuating liquors. Milk, diluted with twice as much water and warmed, has been of considerable advantage in this case, by immersing the feet and hands in it. The like liquors injected by clysters are also beneficial, if the larger intestines are not plastered over with thick incrustations.

The

The diet must here be thin and light, that it may the better enter the bibulous veins that are as yet open. For this reason a decoction of bread is ordered, as it affords the best nourishment, and opposes putrefaction. Honey is also added, that by its saponaceous virtue, it may scour the incrustations, and dispose them sooner to fall off. But wine is likewise intermixed here ; because, by its wonderful penetrability, it enters the bibulous vessels, and in a manner opens a way for the nutritious parts of the bread.

2. By the means directed in the preceding number, the strength is supported, the blood supplied with a diluent vehicle, and its circulatory motion moderately raised. But the apthous incrustations are sometimes of considerable thickness, and growing dry, they adhere so firmly to the whole surface of the primæ viæ, that the mere impulse of the fluids, urging a tergo, is not sufficient to make them separate and fall off. In this state it will be necessary to soften, relax, and in a manner dissolve the apthous crust, that it may separate with a slight force. Watery drinks prepared from emollient and mealy substances will answer this intention ; for these acquire a viscosity by which they stick longer upon the parts, while simple water runs off immediately. To these drinks it is usual to add ingredients that have a soapy detergent force, which still better loosen and separate the apthous crust. Thus decoctions of turnips, or rather their expressed juice slightly boiled, is a remedy approved by long experience in those parts where the apthæ are most frequent. When turnips are not to be had, the common people use small beer or ale sweetened with sugar. Veal broth with rice will be useful to foment and gargle the mouth, and slowly swallowed, will be of like use to the stomach and intestines, and, at the same time, afford good nourishment to the body. The same liquors may be also

injected as clysters. Forms of the like medicines are inserted in the *Materia Medica*.

*Sydenham** recommends the use of the bark in a thrush, that attended an epidemic fever; and affirms, that it is a more effectual medicine for promoting a separation of the aphthæ, than any other he knew; and therefore gave it when the aphthæ did not incline to fall off spontaneously, but held out a long time. I followed this practice, and was surpris'd to find, that the apthous crusts fell off sooner in those patients who had used the bark, than in those who had not, and made me no less wonder at Sydenham's sagacity in treating diseases. But I was not at that time acquainted with the use of the bark in mortifications.

3. When the aphthæ fall off the parts appear raw, and, if the incrustations were thick, they are likewise extremely painful, and are even irritated by honey and the juice of turnips. The softest emollients only can here be used; and the decoction prescribed at the first number of this aphorism will be of great service; and also the linctus composed of cream, the yolks of eggs, and diacodium, under the present number. But when the pain abates, mild corroborants will be useful to contract the over-dilated vessels; which will be effected by the decoction of the leaves of agrimony, with honey of roses, recommended in the *Materia Medica*.

4. But when there is danger of a diarrhæa from the sudden separation and falling off the thrush, corroborants must then be used. But if the dilated vessels are bound up, before the matter of the disease is expelled, there would be danger of a relapse, when the patient is now in the most weak condition. The physician ought therefore, before he ventures on the use of astringents or strengtheners, to review

* *Schedul. Monitor.* 656.

the signs by whose appearance he may be safely directed to the use of such remedies. If the aphthous matter is not wholly expelled, there is a fever often attended with some return of anguish or oppression, the pulse too is weak, and the patient faint and low : if it is wholly expelled, the symptoms are the reverse. But an hypostasis, or sediment in the urine, will best shew the concoction of the aphthous matter. A form of a proper corroborating medicine is given in the *Materia Medica*, under the present number.

5. It was observed, at Aph. 988, that purges do not agree with a thrush, but often produce very dangerous hypercatharxes : but in the close of the disease, a purge is necessary to carry off the incrustations that have fallen from the stomach and intestines, left, being too long retained, they might putrify, and produce further mischief. But then these purges ought to be restraining and corroborating ; such as rhubarb, myrobolans, and the like ; a form of which we have in the *Materia Medica*, under the present number.

A P H. DCCCCXCI.

FROM this history, and cure of the aphthæ, many obscure practical problems may be resolved. As why in a fever, attended with a diarrhæa or dysentery, a thrush appears towards the end of the distemper. Why a thrush mostly happens to children and aged people. Why aphthæ more especially invade those who, in the beginning of the fever, have been treated with heating or astringent medicines, or diet. Why a purge given in the beginning of such fevers often prevents the aphthæ. Why a troublesome and fatal hiccup attends the worst kinds of aphthæ. Why aphthæ in the mouth, a loose belly,

belly, and loss of appetite, are joined together by *Hippocrates*. Why an aphthous incrustation of the stomach produces a lenteria. Why black aphthæ are accounted pestilential. Why *febrile* aphthæ of the mouth, in pregnant women, presage abortion. Why aphthæ attend putrefactions of the liver, lungs, &c. Why a tumour, heat, suffocation, and quinsy, sometimes follow a refrigeration of the aphthæ. Why a delirium, restlessness, want of sleep, and cold sweats, are so fatal in the aphthæ.

Why in a fever, attended with, &c.] This is confirmed by the observations of Sydenham. But the chief reason seem to be the profuse evacuations made by the diarrhæa or dysentery; by which the more fluid parts being exhausted, the remaining viscid juices may stop in these final vessels, and there form a thrush; but the particular nature of the fever (hardly to be explained from a knowledge of the causes, and only to be learned by observation) is the principal reason why its matter generally settles upon these parts.

Why a thrush mostly happens to, &c.] Children, and new-born infants, have a great quantity of a tough mucus, or phlegm in the primæ viæ, which they either throw up by vomitings, or expel in loose stools; and therefore a great deal of this mucus passes through the extremities of the vessels, where, if it be arrested, it may form aphthous incrustations, but they are generally of the milder sort, and soon fall off; and when the over dilated vessels separate from the blood a large quantity of this glutinous matter, children have then a purging, until this load is discharged.

But in old people seized with acute diseases the vital powers being weakened, a longer time is required

quired to concoct and subdue the morbid matter; and the critical evacuations and translations are likewise more slowly performed, and nature endeavours to effect that by repeated efforts, which is done at one, in young robust persons. Besides, in old age the humours abound with a glutinous lentor; therefore the primæ viæ are loaded with a tough phlegm, while the external skin is dry, and juiceless.

Why aphthæ more especially invade, &c.] This is an observation of Sydenham's. But astringents will also have the same effect, as they constrict the solids, and thicken the fluids; especially if given in the beginning of the fever, or when there is a diarrhœa, or dysentery, and the morbid matter not yet expelled.

Why a purge given in the beginning of, &c.] Because this will often carry off the stimulating acrimony.

Why a troublesome and fatal hiccup, &c.] There are two stages in which hiccups appear, either in the beginning, when the aphthous matter breaks out copiously about the superior orifice of the stomach, before the aphthæ appear in the fauces, or towards the end of the disease, when they fall off. But a singultus, in the beginning of the thrush, is of worse presage than that in the end; for it denotes the interior surface to be lined with very thick aphthæ, which are commonly fatal. Whereas that attending the falling of the aphthæ, though indeed troublesome, is rarely of bad consequence. This is also confirmed by Sydenham, who asserts, that a patient is in no danger from a singultus in the close of the fever, unless he be crammed with too many useless medicines, and that it will go off spontaneously. The lightest and softest nourishment is here only necessary, to avoid irritating the raw and painful parts. But when the physician, without reason, suspects that offensive humours are lodged in these parts, and attempts their removal by vomits or purges, the stomach

mach is often inflamed, to the great hurt of the patient.

Why aphthæ in the mouth, a loose belly, &c.] From the history of the aphthæ it is evident, that the intestines may be disturbed, and the appetite destroyed, since the aphthous incrustations occupy the whole tract of the primæ viæ; and therefore these might be properly joined together by *Hippocrates*.

Why an aphthous incrustation of the, &c.] To digest the aliments requires not only a proper force in the stomach and intestines, but likewise a due proportion of well concocted humours to be gradually mixed with them; all which is wanting while the stomach and intestines are incrustated with thick aphthæ; and therefore the aliments flow through them unaltered, as in a lenteria.

Why black aphthæ are, &c.] A black coloured aphthæ, at their first eruption, shews that the matter of the disease is of so malignant a nature as to render the extremities of the vessels where they stick gangrenous.

Why febrile aphthæ of the mouth, in, &c.] Because these hinder the due preparation of the aliments, and absorption of the chyle; and therefore, as the gravid mother requires nourishment to support two bodies at the same time, the want of chyle will be soon destructive to the foetus.

Why aphthæ attend putrefactions of the liver, &c.] This chiefly happens in the last stage of a fatal phthisis, when the patient melts away in nocturnal sweats, and the spittings stop; whereupon nature, as her last effort, endeavours to throw the ulcerous matter upon the surface of the primæ viæ.

Why a tumour, heat, suffocation, &c.] Namely, when the patient draws in cold air, or uses drinks or gargles actually cold; for then the mouths of the aphthous vessels are constricted, the aphthous matter condensed, and the crusts more compacted; by all which the expulsion of the morbid matter is hindered.

hindered. Upon this the fever increafes, and urges the humours with greater force upon the obftructed parts, whence a heat and fwelling, and in the fauces a dangerous quinfy.

Why a delirium, reftleffnefs, &c.] For thefe denote that the vital powers are finking, that the matter of the difeafe is either fo abundant, or fo malignant, as to difturb all the functions, and that it now begins to feize the veffels of the brain itfelf.

A P H. DCCCCXCII.

UPON the whole, the general rule is, that the pellucid, white, thin, fcattered aphthæ, that are foft, and eafily feparated without returning again, are a good kind. On the contrary, thofe which are of very opaque white, yellow, brown, black colour, running together into clofe, thick, hard, and tough incruftations, continually repullulating, and eroding the part, are of the worft kind.

Of a NEPHRITIS, or Inflammation of the KIDNEYS.

A P H. DCCCCXCIII.

THAT the kidneys are feized with a true inflammation, we know from a burning, pungent, intenfè, and inflammatory pain of the part where the kidneys are feated; from the acute continual fever that accompanies it; from the fmall quantity of urine that is made, and often difcharged, but little at a time, and of
an

an intense red colour; or in the highest degree of the disorder, watery and limpid; from a numbness in the thigh of the affected side; from a pain in the groin, and retraction of the testicle; from iliac pains, bilious vomitings, and continual eructations.

From the small quantity of urine, &c.] As the kidneys separate the urine from the arterial blood conveyed to them by the emulgents, this function of the kidneys must unavoidably be injured by their inflammation. But as the urine is rendered more acrid by the acute fever which attends, the patient will often perceive a stimulus to discharge, even though but little be contained in the bladder. But when the renal tubes are so stuffed up as only to transmit the fluid parts of the humours, the urine will then be discharged thin and limpid, which is bad both as a sign, and as a cause. As a sign, it denotes the violence of the inflammation; and as a cause, it shews that all the acrid parts of the humours are now retained, and that the blood thus exhausted of its diluent vehicle, becomes more and more inflamed.

From a numbness in the thigh of, &c.] These symptoms more frequently attend a nephritis from a stone or gravel, than one that is merely inflammatory. But whoever considers the course of the ureters with respect to the iliac and spermatic vessels, as they are in the tables of Eustachius^a, will readily perceive, that a stone, in passing through the ureter, must compress and stimulate these vessels, and likewise the vas deferens which ascends from the testes to the vesiculæ seminales.

Iliac pains, &c.] Especially when the disease is very violent, for then all the nerves of the abdominal viscera being irritated, produce the bad symptoms of this disease. But it is very seldom that an

^a Tab. 12. fig. 1. and 3. and tab. 25.

Aph. 994. Inflammation of the Kidneys. 143
inflammatory nephritis is, in the beginning, attended
with the symptoms of an iliac passion, which how-
ever accompany the disease when it is further ad-
vanced. See Aph. 995.

A P H. DCCCCXCIV.

ALL the general causes of inflammation di-
rected to the kidneys may produce a ne-
phritis, and therefore, 1. Whatever hinders the
extremities of the arteries to transmit their
fluids, as wounds, contusions, abscesses, tu-
mours, lying a long time in bed, strong exer-
tions of the body, or a small stone. 2. What-
ever hinders the urine from passing into the
pelvis, ureter, and bladder, as the causes be-
fore mentioned, and such like, directed to these
parts. 3. Whatever forcibly drives the grosser
particles of the blood into the uriniferous tu-
buli, such as running, long and hard riding,
great heats, straining, a plethora, sharp diure-
tics, or poisons. 4. A spasmodic contraction
of all these small vessels, continued a long
time.

[Lying a long time in bed.] The kidneys are so
seated, as partly to lie upon the lower side of the
diaphragm, and the quadratus muscle of the loins;
but they rest upon the psoas muscle, hence they are
agitated by the diaphragm in respiration, and by the
muscles of the loins when the body is in motion.
By this situation care is taken to prevent stagnations
and concretions in the kidneys while the body is kept
in daily exercise. Hence sedentary people are often
afflicted with disorders of the kidneys. Hence also
those who are obliged to lie a long time in their beds
for

for the cure of a broken thigh, especially if they be corpulent, are often seized with nephritic complaints, although they never were before troubled with them; for when corpulent persons lie long on their back, the kidneys and ureters are compressed by the weight of the abdominal fat.

Strong exertions of the body.] For then all the muscles of the body are very much swelled and strained, by which means all the blood-vessels of the viscera are immensely distended; whence obstructions and inflammations, or a sudden rupture of the vessels, especially if the solids are of a weak texture. How often do spittings of blood, bleedings from the nose, or fatal apoplexies, arise from this cause? If we therefore consider that the kidneys are fastened to some of the strongest muscles of the back now turgid with action, it will appear what a force the kidneys sustain when one's utmost strength is exerted. Violent strainings may therefore be productive of a nephritis.—A small stone may likewise cause a nephritis, by irritating or wounding the kidney by its asperity, or compressing the contiguous vessels by its bulk.

Whatever forcibly drives the, &c.] Although the secretory tubuli of the kidneys do in their natural state only draw off the watery parts of the blood, with such as are dissolvable in Water; yet we learn from practical observations, that in some persons they become so dilated, as to transmit the grosser parts of the blood, and thus an obstruction, and consequently an inflammation may ensue.

Running.] This by the strong action of the muscles greatly quickens the return of the venal blood to the heart, which increases the velocity of the circulation, and that to such a degree, as to drive the grosser particles of the blood into the finer vessels, hence inflammations, &c. as was before proved at Aph. 100.

Long

Aph. 994. Inflammation of the Kidneys. 145

Long and hard riding.] The shocks from riding on horseback, as well as those in a coach over rough ways, will increase the secretion of the urine more than at other times; and therefore, in a given time, the blood is more copiously determined, and with a greater impetus, to the secretory organs of the urine. Hard riding may therefore so dilate these small vessels, as to receive the grosser parts of the blood, and produce a nephritis. I have often seen bloody urine from this cause, and in quantities so profuse as to endanger the life of the patient.

Great heats.] Heated air dissipates the more fluid parts of our humours, thickens the remainder, and renders it more acrid; from whence again a strangury may arise^a. Heat therefore may be reckoned among the causes of a Nephritis, especially when some of the foregoing causes likewise concur, as violent riding, or running.

A Plethora.] But this cause is a general one, and requires some other cause to concur with it, to fix the inflammation rather upon the kidneys than upon some other parts, as violent riding, &c. See what has been said of a plethora, at Aph. 106.

Sharp diuretics, or poisons.] Cantharides, and many other caustic insects, irritate and inflame the bladder, and operate chiefly upon the urinary passages. But there are poisons of a more subtle nature able to produce these mischiefs.

A spasmodic contraction of all these, &c.] Hysterical women, and hypochondriacal men, sometimes make a profuse quantity of limpid urine, wholly without smell or taste, immediately after some disturbance of the mind. Here the renal secretion is increased, and the urinary tubule so streightened as to transmit only the watery parts of the blood. If this cause continues a long time, or frequently returns, the blood, thus deprived of its more fluid parts, will be

^a Boer. Instit. Med. §. 746.

146 Of a NEPHRITIS, or, Aph. 995, &c.
apt to stop in the ultimate extremities of the arteries,
and thus produce an inflammation. Besides, in such
patients the larger blood vessels are also contracted
with a spasmodic force; as appears from the paleness
of the face, and a cadaverous-like countenance.

Sometimes the œsophagus, so ample in its capaci-
ty, is so constricted that the patient can swallow no-
thing for several hours after the paroxysm, and the
same effect, from the same cause, is extended even
to the stomach and intestines. Now such a constric-
tion of the vessels was reckoned among the causes of
an inflammation, at Aph. 375.

A P H. DCCCCXCV.

IF a violent inflammation seizes these small
vessels, they are often so constricted as to
let no urine pass, or, at least, very little, and
that pellucid, thin and watery; which is one of
the worst signs. The renal and contiguous
nerves are often so irritated as to excite pains and
convulsions in the stomach, mesentery, intest-
ines, and ureters; whence eructations, a nau-
sea, vomitings, purgings, the iliac passion, a
suppression of urine, a stupor, and immobility
of the legs, and a burning heat in the loins.

A P H. DCCCCXCVI.

A NEPHRITIS is cured by the help of kind
nature, and the mildness of the disease.
1. By a resolution. 2. By a copious discharge
of red, thick urine, before the seventh day, or,
at farthest, before the fourteenth. 3. By the
bleeding piles, when they flow plentifully in the
beginning of the disease.

We

We here consider the cure of a nephritis, as an inflammatory distemper, without having any regard to the remote causes. For whether it arises from a small calculus, or from the causes enumerated at Aph. 994, there will be no difference as to the cure; which we shall shew at Aph. 1000.

A P H. DCCCCXCVII.

A NEPHRITIS, in its inflammatory state, is cured, 1. By the general remedies for the cure of all inflammations; as bleeding, revulsion, and dilution. 2. By lenient, emollient, and antiphlogistic decoctions, taken in great plenty. 3. By clysters, fomentations, and warm baths, composed of the same materials. 4. By a moist, soft diet, by avoiding a warm feather-bed, but more especially lying upon the back.

If the nephritis appears to be very violent, without any of those discharges mentioned in the preceding aphorism, which experience assures us to have carried off the disorder, we must then have recourse to the assistances of art, recommended in the present aphorism. In the *Materia Medica* there are proper forms of medicines given for this intention.

A P H. DCCCCXCVIII.

IF the pain, or convulsions, are very violent, opiates will then be serviceable.

We have already treated of the use of opium in allaying of pain, at Aph. 202, and 229; where we likewise remarked, that these medicines only removed the sense of pain, without always removing its cause;

148. Of a NEPHRITIS, or, Aph. 999, &c.
and therefore we must, at the same time, continue the use of remedies proper to subdue the cause of the disease.

A P H. DCCCCXCIX.

EXcessive vomiting, a symptom of the disease, is often relieved by drinking warm water sweetened with honey.

In the act of vomiting, the motion of the blood is accelerated through all the vessels, and the inflamed kidneys, at the same time, roughly agitated; so that vomiting will do more hurt than service in a nephritis. But when it arises from a calculus lodged in the pelvis of the kidney, or its ureter, vomiting may be of service to promote the passage of the stone down to the bladder; especially if the passages are first lubricated and relaxed with emollient decoctions, oil of sweet almonds, and the like.

A P H. M.

AND it is by this method only that a nephritis arising from a calculus lodged in the kidneys or ureters, can be safely cured.

A P H. MI.

IF the causes of a nephritis be violent, and can neither be removed by resolution, nor cured by the method directed at Aph. 997, but lasts beyond the seventh day, an abscess is then to be feared; which we know to be forming, from a remission of pain, and a change of it into a beating or throbbing, from frequent shiverings,
and

Aph. 1001. Inflammation of the Kidneys. 149
and a weight and numbness in the affected part ;
and that it is already formed, is known from
the forementioned signs, followed with a beating,
heat, and tension in the part ; from purulent
urine, fetid, like that which turns putrid by
standing. As soon as we are certain that the
abscess is formed, we must first use the most
powerful maturants and emollients ; and when
the urine appears purulent, then diuretics, con-
sisting of pure medicated waters, whey, and the
like, giving at the same time balsamics.

In our history of a peripneumony and pleurisy,
we enumerated those signs which shew that an inflam-
mation, in some of the internal parts, is changing
into a suppuration or abscess. The same signs hap-
pen here ; such as, a remission of the pain, a throbbing,
vague shiverings, &c. But sometimes other
symptoms attend a renal vomica ; for I have known
a burning pain in a nephritic patient, that extended
as high as the scapula and axillæ of the same side.
Hippocrates observes^a, that a strangury accompanies
a suppuration of the kidneys, but these are symptoms
that do not always attend a nephritis..

But matter discharged in the urine is no certain
sign of an ulcer in the kidneys ; since it may come
from the ureters, or the bladder, affected in the same
manner : whence *Hippocrates*^b cautiously observes,
“ If blood or matter is voided by urine, it denotes
“ an ulcer, either of the kidneys or bladder.” And
we before remarked, at Aph. 896, that matter col-
lected in other parts of the body was absorpt by the
veins, and evacuated by the urinary passages. But
when a nephritis has preceded, a discharge of puru-
lent matter puts the case beyond all doubt, as *Tral-
lian*^c well observes, who has moreover added other

^a Aph. lix. Sect. v.

^b Aph. lxxv. Sect. iv.

^c Lib. ix. cap. v.

signs by which one may distinguish whether the matter comes from the kidneys, or from other parts. Matter absorbed from other parts appears intimately mixed with the urine, and subsides but very slowly to the bottom; for being mixed with the blood, it is attenuated by the action of the lungs and arteries, and afterwards secreted with the urine through the renal ducts. But when matter comes immediately from an ulcer of the kidneys, it is never thus intimately blended with the urine; but soon after it is discharged, separates from it.—Matter from the bladder is much more tenacious, and, like glue, directly subsides to the bottom of the urinal; while matter from the kidneys is more loose and fluctuating. *Aegineta* has also accurately collected the diagnostic signs of a suppuration in the kidneys, ureters, and bladder.

In a suppuration of the kidneys, the curative indications are, 1. To promote the suppuration, by plenty of the most emollient decoctions, by clysters of the like kind often repeated, by warm bathing, and the application of cataplasms to the region of the loins. 2. To break the abscess as soon as possible, lest the matter should become putrid by long standing, or be absorbed into the blood, and produce a purulent cacochymy, or consumption. The only remedy for this intention is to stimulate the kidneys by coughing, sneezing and riding in a coach, as was before directed at Aph. 857, in breaking a vomica of the lungs. If, after the trial of these means, pus should appear in the urine, we may then be sure the abscess is broke, and by the condition of the matter judge of the state of the ulcer. For if it appears white, smooth and equal, there are hopes of a cure; but the more the matter discharged degenerates from these qualities, so much the worse; yet it is rarely that the matter is good at first, especially if it has been long confined; for it is then commonly fetid and bloody, but afterwards becomes more laudable.

But

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But as we cannot prevent the urine from continually washing the ulcerated kidney, we must blunt the acrimony of the urine by plenty of moderately detergent drinks. The whey of milk, especially in the summer, is one of the best remedies, and will almost of itself complete a cure. Asses milk, and, when the ulcer is once cleansed, cows milk, are justly recommended by *Trallian* and *Aegineta*. The same intention is answered by Selter waters, and the like. The infusions and decoctions of the plants, recommended in the *Materia Medica*, in the preceding aphorism, will be here also of equal service.

The turpentine, with the balsams capaiba, mecha, and the like, given in very small quantities, three or four times a day, drinking after them plenty of milk, whey, or of a soft vulnerary decoction, are of excellent use in ulcerations of the kidneys; but in a large dose they heat the body, and stimulate too much, and even sometimes cause a troublesome strangury. I have often seen very good effects from a dram of these mixed with an ounce of the Succ. Glycyrrh. of which twenty or thirty grains may be taken every four hours, and washed down with a draught of whey, or some of the medicated drinks before recommended. In the use of these the patient may persist, till there is no further appearance in the urine; and then, to the same mass may be added, such medicines as heal and agglutinate; as mastic, olibanum, sarcocol, and the like.

But this is the method of cure when the broken abscess pours out its matter into the pelvis. For although it commonly takes this course, yet it sometimes makes its way through other parts; and Hippocrates observes, that a renal abscess sometimes points outwardly. But since the kidneys are almost contiguous to the colon, and parts inflamed often grow one to another, as was observed at Aph. 843, and 897, it is not improbable but that the kidney may so unite to the colon as to allow the abscess to

discharge its matter into the cavity of the intestine, and from thence be evacuated by stool. It is true, indeed, that the kidneys are placed behind the peritonæum, and therefore do not immediately touch the colon; but it was observed, at Aph. 936, that the diaphragm interposed between the liver and the lungs, did not prevent the matter of an abscess of the liver from passing into the lungs, and being by them discharged by spitting. Hippocrates * seems to have pointed out this passage, when he says, in treating of this disorder, "If the matter breaks inwardly, and descends to the intestinum rectum, there are hopes of a recovery." Ætius has made the same remark. In this case the proper cure is that directed for a suppuration of the intestines, at Aph. 996.

A P H. MIL.

BUT if this suppuration continues a long time, the whole kidney is consumed, and forms a bag of no use; and thus occasions a *tabes renalis*.

In suppurations of the external parts there is such a loss of substance, as leaves behind unsightly scars. The same also happens to the kidneys; for even their solid parts come away in the purulent urine in the form of caruncles. Kildanus saw pieces as large as one's thumb discharged through the urethra, with extreme pain and torment. It may indeed seem strange that the whole substance of the kidney should be thus consumed without any fatal hæmorrhage, considering the magnitude of the emulgent artery, and its nearness to the heart; yet we rarely meet with suppurations attended with bleedings; for the ends of the vessels are so contracted and closed up by

* De affectionib. cap. xvi.

Aph. 1003. Inflammation of the Kidneys. 153
the suppuration, as hardly to give admittance to the blood, which then circulates through the other adjacent vessels as yet open. Surgeons observe, in amputations, that when the parts are once covered over with matter, there is no danger of an hæmorrhage. The whole substance of the lungs is sometimes also consumed by a purulent spitting, without any hæmorrhage; though the pulmonary artery is very large, and rises from the right ventricle of the heart.

A P H. MIII.

IF the inflammation forms a scirrhus, there arises a paralyfis or lameness in the leg of the same side, which is a disorder by no means curable; hence also a slow consumption, a dropsy, &c.

That a large scirrhus kidney may compress the psoas muscles, and some of the nerves that go from the medulla spinalis to the lower extremities, is evident from the nineteenth table of *Eustachius*, compared with the twenty-fifth, that shews the situation of the kidneys. But it seems a doubtful point, whether a complete palsy may ensue in the leg and thigh of the same side, from a tumour of the kidneys. Since the large nervous trunks that are sent to those limbs, arise from the foramina of the os sacrum, and are so situated as not to be compressed by any tumour of the kidneys, however large it may be. *Ætius* and *Ægineta* have well remarked the symptoms that arise from a scirrhus in the kidneys; but they do not mention a complete palsy, only a numbness in the lower extremities.—That scirrhus indurations of the internal viscera do frequently occasion a dropsy, will be shewn hereafter, when we come to treat of that disease, at Aph. 1229.

A P H.

A P H. MIV.

BUT if a small portion of the inflammatory matter coagulates in the minutest follicle of the urine, it there forms a basis, to which the fabulous matter of the urine adhering, produces a calculus, or stone, in the kidneys, and thus encreases their bulk. But of the stone we shall treat hereafter.

A P H. MV.

BUT a nephritis sometimes terminates in a gangrene, which is known from the violence of the cause, and of the symptoms, from the little relief obtained by remedies. (See Aph. 994, to 997,) and from a sudden remission of the pain without any manifest cause, attended with a cold sweat, a weak, intermitting pulse, a singultus, little urine, or none that is livid, black, full of hairs, fetid, or rendered dirty with brown or black caruncles, and a sudden and entire loss of strength; in which case no remedy will avail, but that directed at Aph. 902, for a gangrenous pleurisy.

A P H. MVI.

HENCE it is plain, that there are numberless kinds and causes of a nephritis; and that one of these causes is a calculus; yet that all of them require almost the same method of cure. From hence also we learn why a nephritis so frequently attends fevers, and their crises, and

Aph. 1006. Inflammation of the Kidneys. 155
and likewise the nature and cure of an ischuria,
arising from a fault of the kidneys or ureters.

Though a nephritis may arise from all the causes enumerated at Aph. 994, yet none is more frequent than a calculus, or gravel; which yet does not produce a nephritis otherwise than by the weight and roughness of its parts, irritating whatever it touches; for there are a number of observations which evince, that stones have been found in the kidneys of persons who were never troubled with a nephritis. Neither does the method of cure differ much, although it arises from such a variety of causes; for these do not, properly speaking, produce a nephritis, until they have raised an inflammation.

Why a nephritis so frequently attends, &c.] In inflammatory diseases, the morbid matter being subdued, and rendered moveable, is discharged by the urinary passages, and therefore must first pass through the kidneys. But as this matter has such properties as will not allow it to move through the vessels without disturbing the circulation; it is no wonder, if it lodges in the narrow extremities of the renal vessels, it should, by its irritating acrimony, produce a nephritis. For we have already observed, at Aph. 888. No. 2 and 923, that a critical urine often occasions a strangury, and must therefore give also some uneasiness to the kidneys. But in other distempers the morbid matter will sometimes cause a slight inflammation in passing through the viscera, before it is deposited upon any particular part.

From hence also we learn why, &c.] An ischuria, or suppression of urine, is commonly distinguished into two kinds; one, in which there is no urine sent into the bladder; the other wherein the bladder discharges not the urine it contains. The first is known, if there be no tension about the pubes, nor any tumour in the hypogastrium from the distended bladder; but most certainly when, by passing the catheter,

156 Of the APOPLEXY. Aph. 1007, &c.
ter, there is no urine discharged from it. This kind of ischuria arises either from an inability of the kidneys to secrete the urine from the blood (as from an inflammation) although the passage through the ureters be open enough; or from a stone, congealed blood, thick mucus, and the like, blocking up the ureters, while the secretion of the urine is duly performed. But see more of this hereafter when we come to treat of the stone.

Of the APOPLEXY.

A P H. MVII.

THE great acuteness of the apoplexy, its frequent connection with inflammation, and its giving birth to a great many other disorders, requires that we, of course, treat of it in this place.

Besides, it is necessary to know the history of an apoplexy before we can treat of the palsy, epilepsy, catalepsy, and carus; because these diseases frequently follow an apoplexy, sometimes precede one, and are often produced from the same causes.

A P H. MVIII.

AN apoplexy is said to be present, when, of a sudden, all the senses and voluntary motions are abolished, the pulse in the meantime remaining, for the most part, strong, the respiration difficult, high, and snoring, together with the appearance of a profound and continual sleep.

Here

Here we treat of the true apoplexy; for we see that persons have been said, by authors, to die apoplectic, who have indeed died suddenly; namely, of a syncope, from a polypus suddenly propelled from the heart into the larger arterial vessels, or from a rupture of the great vessels near the heart, &c. but it is certain that they were not apoplectic. For although the apoplexy frequently kills, yet, to constitute that disease, all the animal functions ought to be abolished before death, while the vital ones are still remaining, and even sometimes increased, as will hereafter appear at Aph. 1014; and by this definition of an apoplexy, it is perfectly distinguished from a syncope and deliquium.

A P H. MIX.

THE most accurate and repeated observation has taught us, that an apoplexy has happened as often as those causes have preceded, which are able to hinder entirely, or in a considerable degree, the efflux of the spirits secreted in the *cerebrum*, to the organs of sense and voluntary motion, and their reflux from these organs to the common sensory; whilst there remains a free egress, and probably regress, of the spirits of the *cerebellum* into the heart and organs of respiration, in a degree sufficient to support these functions for some time.

If we consider what is demonstrated in physiology^a, concerning the use and function of the brain, it will appear evident, that there must be a free course, of a very subtil fluid, from the encephalon through the nerves to the organs of sense and the muscles, in order to perform sensation and muscular motion. But

^a Boerhaav. Instit. Med. Sect. cclxxxiv.

as in an apoplexy all the senses and voluntary motions cease; whatever therefore hinders this free passage from the encephalon through the nerves to the voluntary muscles, will be sufficient to produce an apoplexy. *Aegineta** has accurately described this disease in the following words: "The common origin of the nerves being affected, and thereby all the parts of the body losing their sense and motion, is the disorder called an apoplexy." The common origin of the nerves is now called by physicians the common sensory, by which is understood, that part of the body from whence all the nerves destined for the senses and voluntary motions derive their origin. But although in the apoplexy the voluntary motions cease, and the organs of the senses do not perform their functions, yet there still remain several motions in the body. The action of the heart and arteries continues, and the several secretions of saliva, mucus, urine, &c. depending thereon. Respiration likewise goes on, as also the peristaltic motion of the intestines. But all these motions are performed without the direction of the will, neither has the will any command over them, so as to increase, diminish, or regulate them. Whence the most intelligent physicians have justly concluded, that the vital motions have a different origin from the former. Wherefore it is affirmed in the text, not without reason, that in an apoplexy the efflux of the fluid of the brain into the organs of sense and voluntary motion must be either wholly, or in part, intercepted, while that of the cerebellum into the heart and organs of respiration still remains free.

* Lib. iii. cap. 18. pag. 31.

A P H. MX.

ALL which causes, enumerated by observation-writers, may be reduced to a few classes, for the ease of practice.

1. The natural make of the body, as a large head, a short neck, and frequently consisting only of six vertebræ; a very corpulent and fat body, a plethoric constitution, and an abounding phlegmatic cacochymy. See Aph. 1015, where this number is explained.

2. Whatever causes change the blood, lymph, and the matter which supplies the spirits, so as they cannot pass freely through the arteries of the brain, but are there impacted. Such are frequently, 1. Polypous concretions in the carotid and vertebral arteries, whether first formed about the heart, or within the cranium itself; which shew themselves by a palpitation of the heart, an unequal pulse, a swimming in the head, and dimness of sight, which frequently return, and are increased by violent motion, or great heat.

2. An inflammatory thickness of the blood manifesting itself by an acute continual fever, a phrensy, and a violent inflammatory pain in the head of long standing; and likewise by all the symptoms arising from the blood being hindered to flow through the vessels of the brain, in consequence of which, it rushes in greater quantity, and with a greater impetus through the external branches of the carotids, whence a redness, swelling, and inflammation of the eyes, with a discharge of tears, and the same in the face and neck. 3. A thick, glutinous, pituitous disposition of the whole mass of blood; whence this disease frequently invades old, catarrhus, cold, moist, pale, and leucophlegmatic people; nay, it may even be foretold to such before it happens, from their laziness,

ness, stupidity, sleepiness, aversion to every kind of motion; from an unusual slowness of speech, from tremors, stertors, night-mares, from the eyes being languid, turgid, watery and dim, a frequent vomiting of phlegm, a giddiness of the head, difficult breathing upon the least motion, with the alæ of the nose compressed, and from all the causes which either produce or accumulate a sluggish glue. See Aph. 69 to 75.

In this number are enumerated those causes which produce an apoplexy by a fault of the humours unable to pass freely through the vessels of the brain. But as too great thickness of the humours may arise from polypous concretions, an inflammatory spissitude, and a phlegmatic lentor, to each of these the diagnostic signs are added, which will be of service in directing to the proper method of cure.

3. Whatever causes compress the arteries, and nervous vessels of the brain, so as to hinder the blood and animal spirits from passing through them, 1. Hence a mere plethora, a redundancy of gross humours, and a very hot constitution, are productive of apoplexies, especially if the velocity of the blood is increased by violent motion, or great heat; hence it usually attacks those after plentiful eating, or drinking; from acrid and strong stimulating medicines, such as cordials, volatiles, vomits, &c. from violent heat and exercise, intent application of the mind, long continued. 2. Tumours of every kind within the cranium, whether inflammatory, suppuratory, serous, pituitous, steatomatous, scirrhus, or bony, either compressing the arteries, or the venous sinuses near the *torcular Herophili*, or the medullary origins of the nerves, or the medulla of the cerebrum itself. 3. Too great a velocity of the blood determined towards the head, while its circulation through the arteries of the inferior parts is obstructed, which may proceed from numberless causes. 4. Whatever causes compress the veins without the cranium, which

which convey the reflux blood from the brain.

5. Humours extravasated on the dura or pia mater, whether it be blood, pus, ichor, or lymph, compressing them externally.

In the preceding number of this aphorism we enumerated those causes of an apoplexy, which arise from a fault of the fluids circulated through the vessels of the encephalon, in this are enumerated those which compress the vessels of the brain, and hinder the free circulation of the humours through them.

4. All the causes which destroy the arterial, venal, and lymphatic vessels of the internal substance of the brain, near its ventricles, in such a manner, that the extravasated fluid, by its pressure, may hurt the vaulted origins of the nerves of the cerebrum. Such are acrid serum in hydropic and leucophlegmatic people; blood in plethoric, and atrabiliary acrimony, in melancholic, scorbutic, and gouty patients; which very common cause usually operates between the age of forty and sixty. All these latent qualities being excited by moving causes, frequently give sudden rise to this disease. The fore-knowledge therefore of it ought to be learnt from the nature of the pre-existent matter, and the causes capable of exciting it into action. Violent affections of the mind, and intent study, are chiefly hurtful to these persons.

5. Here also may be ranked some sorts of poisons, which however act in the same manner as the three last preceding causes, N^o. 2, 3, 4, or rather first hurt the lungs, before they affect the brain.

A P H. MXI.

BY the anatomical inspection of bodies which have died of apoplexies, and the historical observation of such circumstances as have occurred in the cure of those patients, we have

arrived at the knowledge of the above-mentioned causes : and proper reflection easily reduces them into these classes, very well adapted to find out the right method of cure.

This distribution of the causes of an apoplexy into certain classes was very necessary ; as it will appear afterwards, that those remedies proper in one species of this disease, would in another, be very injurious.

A P H. MXII.

IT appears from the same circumstances that an apoplexy is frequently produced from different, and indeed very opposite causes ; and therefore, that it has been properly enough divided into sanguineous and pituitous ; but this division is not quite perfect, seeing there are besides, the serous, the atrabiliary, the poly-pous, and others.

The immediate cause is the same in all apoplexies, but the remote ones are frequently very different ; whence there can be no universal method of curing this disease. For if the animal functions are abolished by an inert phlegmatic lentor of the blood, that hinders it from circulating freely through the vessels of the brain, and secreting the spirits ; then that method of cure alone is proper, which attenuates this lentor, gives a due consistence to the blood, and quickens its languid motion. But if the blood, from an inflammatory density, is stopped near the extremities of the vessels, then there is required quite an opposite method of cure, whereby the blood may be dissolved, and the too great motion of the humours moderated. Hence arose that general division of the apoplexy.

apoplexy into hot and cold, or sanguineous and pituitous, and the whole cure was formerly directed to those distinct heads. But this division is plainly deficient, neither can all the causes of an apoplexy be reduced to those two heads.

A P H. MXIII.

BUT the part affected in a perfect apoplexy is the whole *sensorium commune*; but in the *parapoplexia*, only a portion of it; the other parts being in some measure compressed, but in a less degree. The cerebellum, for the most part, remains unhurt in the beginning of the disease.

As in a perfect apoplexy all the senses, both internal and external are abolished, together with the voluntary motions, the part affected ought to be that from which all the nerves destined for sensation and voluntary motions derive their origin.

A P H. MXIV.

WHENCE it appears, why the pulse and respiration are continued, while the senses and voluntary motions are abolished: and even why the pulse and respiration frequently increase, in proportion as the senses and voluntary motions decrease, as also upon the approach of death,

Because in an apoplexy that part of the encephalon is obstructed, which is appropriated for the exercise of the animal functions, whilst the other, which serves for the vital motions, still remains free. But as the action of the whole encephalon depends

upon the free motion of the fluids through the vessels which compose its substance, it is plain, that a free passage through a great number of these vessels being hindered, the others must be more acted upon by the fluids which are sent to them. For the quantity of a fluid secreted being increased, *ceteris paribus*, in proportion to the quantity of fluids applied to the secreting organs, which is now the case in that part of the brain which serves for the vital motions, the reason is evident, why the pulse and respiration increase, while the senses and voluntary motions decrease.

A P H. MXV.

THE violence of an apoplexy, therefore, is judged from the age, constitution, and make of the patient, the urgency of the symptoms, and especially from the entire abolition of the senses and motions; from a very strong respiration, with a profound stertor; from a plentiful viscid foam about the mouth; and a thin sweat standing upon the body, and somewhat cold; from a preceding slight parapoplexia, or a violent epilepsy, or some other more vehement known cause.

[From the Age.] Old people seized with this disease, do not often recover; for generally in them, an inert glutinous matter is collected in the ventricles of the brain, and by the very effects of old age, that morbid quality in the blood is daily increased.

[Constitution.] An atrabiliary constitution increases the danger of an apoplexy, because either the blood by its pitchy tenacity sticks in the vessels of the brain, or the atrabiliary matter received into the circulation, and rendered acrid, quickly destroys every thing
without

without any hopes of a cure. And although this matter should only be hurtful by its tenacity, yet it would be difficult to resolve it.

Make of the patient.] The head large, the neck short, great corpulence, &c. The longer the neck is, the greater is the distance of the heart from the basis of the skull. But as the motion of the blood is greater near the heart, than in parts more remote from it; it is thence very plain, that in short-necked persons the blood will be propelled with greater force through the vessels of the brain, whence likewise these will be more distended, especially as the blood is sent to the head in a straight course through pretty large arteries. Hence the *carotid* and vertebral arteries, when they approach the basis of the skull, are disposed in such a manner, as that the force of the blood propelled through them may be diminished, lest the soft substance of the brain should be hurt by its violence. For this reason, a short neck is justly reckoned a pre-disposing cause of an apoplexy, and daily observation confirms the truth of it.—In persons who are very corpulent, all the vessels of the body are compressed by the accumulated fat; and there is no fat observed within the skull, or at least very rarely, and a very small quantity about the sinuses of the *dura mater*; it is plain, that thereby the larger vessels of the brain must be filled, and dilated, and the smaller ones compressed, whereby its functions will be gradually more and more impaired; hence they grow dull, torpid, forgetful, and sleepy; and at last the brain being oppressed by too great fulness, the vessels burst, and they die apoplectic.—Plethoric persons become sleepy, torpid, and subject to swimings in the Head; and unless that redundance of blood be diminished, either by natural or artificial evacuations, there will be danger of an apoplexy. It has been often observed, that persons of this habit have fallen down apoplectic, in the middle of their feasting, or in a violent fit of anger.—In a phlegmatic

cacochymy the blood degenerates from a healthy state, and is therefore less fit to secrete that very subtil fluid which moves through the nerves, and is secreted by the mechanism of the brain; therefore those who labour under such a cacochymia, are torpid, and perform muscular motion with great difficulty. However, they lead that languid and torpid life a long time; nor do they so readily become apoplectic as those who are fat and plethoric. Whence it is added in the text, an *abounding cacochymy*: namely, when the phlegmatic lentor is so far increased as to stop in the vessels of the brain, and thus either entirely, or in a great measure, prevent the secretion of spirits.

A plentiful viscid foam, &c.] While the passage of the blood through the vessels of the brain is hindered, so much the more are the branches of the external carotid filled; hence the face becomes bloated, and a greater quantity of saliva, and that more viscid, is secreted, which apoplectic patients neither feel to be accumulated, nor swallow; whence it is collected more and more, and by the strong respiration becomes foamy.

A thin sweat standing upon, &c.] The morbid matter in fevers being concocted, is sometimes happily expelled the body in the form of sweat; but such sweats are equally diffused over the whole surface of the body, are warm, and exhale in the form of vapours.—Such sweats denote the vital powers to be strong, the concocted matter moveable, and the vessels pervious. But sweats that are sparing, and collected in drops upon the skin, are generally cold and subviscid, and denote, that the cutaneous vessels are relaxed, and the vital powers so much weakened, as to be unable to propagate heat enough to the surface of the body to resolve the sweat into a vapour.

From a preceding slight parapoplexia.] For as a parapoplexia is a slighter degree of the apoplexy, if then an apoplexy follows, we know the cause of the disease

disease is increased. But this generally happens from the rupture of a small artery in the brain, by which the symptoms will be increased in proportion to the quantity of extravasated blood, till at last, the whole common sensory is affected, and hence an apoplexy.

Or a violent epilepsy.] By the violent and frequent convulsions which attend an epilepsy, the brain must often be so much hurt as to produce an apoplexy; in which case there can be no hope. But sometimes, in the end of an epileptic fit, the patient sleeps with a stertor, and soon after comes to himself again. But when that profound sleep, which usually terminates the fit, is protracted longer than common, there is reason to fear that the epilepsy has passed into a fatal apoplexy.

Or some other more vehement, &c.] Namely, if the cause be such as immediately destroys the brain, as an atrabiliary matter resolved, moved, and rendered acrid, and determined to the head; which can neither be removed by art, nor considerably diminished.

A P H. MXVI.

ON the contrary, an apoplexy which admits of a cure, may be known from the slightness of the symptoms, and the absence of those enumerated in the preceding aphorism.

A P H. MXVII.

ASlight apoplexy is cured by a profuse, equal, dewy, warm, and relieving sweat; by a copious discharge of thick urine, by a large and continued flux of blood from the hæmorrhoidal veins, by a return of the menses, by a diarrhæa and a violent fever.

A P H. MXVIII.

WHEN this disease is somewhat more violent, the cause being overcome, it usually changes into a palsy of some muscular part; either of one side entirely, whence an hæmiplegia; or of all the parts below the neck, whence it is called a paraplegia; which is seldom cured, and leaves always behind it a defect of memory, judgment, and motions of the body; whence they usually remain sleepy, dull, trembling, giddy and pusillanimous.

This termination of an apoplexy is by far the most frequent. All practical physicians know how seldom patients recover of an apoplexy without some hurt of the animal functions. I have seen several patients who, after having been cured of the apoplexy, exercised all the functions of the brain perfectly well; and only deficient in this, that they could not find proper words to express their meaning, and would attempt to explain themselves by signs with their hands and feet. I have likewise seen that masculine strength of mind so enervated, in persons remarkable for good sense, as to cry like a child upon the slightest occasion. The wise *Malpighi*, after being cured of an apoplexy, and a palsy of the right side, found so great defect in his memory and judgment, that the slightest trifle would set him a crying^a. Hence it seems that certain functions of the brain are disturbed, or even abolished by an apoplexy, from some change made in the *common sensory*. See the comment to Aph. 276.

But the reason why a somewhat violent apoplexy is seldom intirely cured, appears sufficiently from

^a Baglivi Op. p. 681.

the known structure of the brain. For it is evident in physiology, that the vessels, by which the cause of muscular motion is conveyed to the muscles, and upon which depend the actions of the internal and external senses, are the smallest, and the most tender of the whole body. Hence, if the cause of the disease should compress, for example, the soft and pulpy substance of the brain, several of those slender stamina may be destroyed ever after. Besides, if that subtiler fluid is hindered for some time to flow through these fine nervous stamina, their sides will collapse and grow together; and then that function, which depended upon their perviousness, will remain incurably hurt during life, although the cause producing the apoplexy should be intirely removed. But we shall treat of this when we come to the history of a palsy.

A P H. MXIX.

BUT an exquisite or perfect apoplexy, (Aph. 1015.) in which the *cerebrum* is greatly injured, the fluids corrupted, and the cause propagated to the *cerebellum*, soon terminates in death, and seldom exceeds the seventh day.

When both the functions of the *cerebrum* and *cerebellum* are greatly injured, that is, those distinct parts, which serve for the senses and voluntary motions, and for those which are involuntary or spontaneous, it is no wonder that such an apoplexy should prove so quickly fatal, as to kill the patient in a few hours, and seldom or ever to exceed the seventh day.

A P H. MXX.

A Future apoplexy may be foreseen, 1. From the natural constitution, (Aph. 1010. No. 1.) 2. From knowing the morbid matter as an antecedent cause, (Aph. 1010. No. 2, 3.)

2, 3.) 3. From the procatartic causes. 4. From the first effects of the disease; such as a trembling, sudden weakness, a vertigo, scotomia, numbness, a sleepiness, a failing of the memory, a ringing in the ears, an inflation of the face and neck, the respiration deeper than usual, with the nostrils compressed, and from the incubus.

As it is so difficult to cure an apoplexy, it will be worth while to know the signs by which we can foresee it coming, that it may be prevented before it is formed: of these we now treat.

Procatartic causes.] These are the causes which, together with the predisponent, constitute the immediate cause of the disease; and therefore necessarily produce the disease. Thus a plethora is a predisposing cause of the apoplexy; nevertheless plethoric persons are not always seized with this disease. But if I see a plethoric person use violent exercise in very hot weather, drink too plentifully of rich wines, or be put into a violent fit of anger, I can foresee a future apoplexy.

Trembling.] This and the following signs are of the greatest use. For an apoplexy seldom happens without some of the signs here enumerated, unless it arises from a sudden rupture of the vessels. But trembling alone is not an absolute sign of an approaching apoplexy, unless it be attended with those which denote that the brain is oppressed. See Aph. 627.

Sudden weakness, vertigo, scotomia.] The first symptom of a vertigo, is an apparent rotation of visible objects which are at rest: the colours of the rainbow seem to glisten before the eyes, the muscles immediately become weak, the strength quite fails, so that the patient cannot support himself; a hissing noise is perceived in the ears, and, the complaint increasing, the eyes become dim. This is called a Scotomia; and soon after he falls down apoplectic. Hence it is plain, that the whole common sensory is affected

affected in a vertigo; but then it chiefly threatens an apoplexy, when the cause of it is lodged within the cranium; which may be known from the constitution of the patient, and other concomitant symptoms. But there is likewise a symptomatic vertigo, in which the *common sensory* is indeed affected, but the cause of it is without the brain; as that which arises from corrupted bile, poisons, &c.

Numbness.] This denotes the sense of feeling either diminished, or quite abolished in the part affected, and frequently precedes an apoplexy; especially that kind of numbness which feels as if the size of the numbed part was magnified. Plethoric persons often feel their fingers as if they were increased in bulk, and the sense of touch impaired. In this case the blood vessels are too full, the *common sensory* oppressed, and, unless this plethora is quickly removed, a slight supervening cause may produce an apoplexy.

Sleepiness.] An apoplexy has a great resemblance to a profound sleep. It is therefore no wonder that persons subject to this disease should be sleepy. See Aph. 1008.

A failing of the memory.] This symptom denotes that the *common sensory* is already affected; hence, in acute diseases, a sudden forgetfulness presages a phrensy. See Aph. 772. Wepfer^a gives a remarkable case of this kind in a prime minister.

A ringing of the ears.] This often happens to healthy people without any danger, as it is often produced from very slight causes in the organs of hearing. But when it arises from affections of the *encephalon*, it is then dangerous, and is mentioned by *Hippocrates* as a sign of water collected in the brain.

An inflation of the face and neck.] This arises from an impediment to the free circulation of the blood through the internal branches of the carotid

^a De Morb. Capit. pag. 359.

arteries; whence the external are more filled, and then a redness or inflation of the face appears. But in a phlegmatic cacochymy, the body grows turgid, with a cold swelling; and the more the inside of the cranium is filled with this phlegmatic humour, the more inflated the face appears, while that flaccid part of it under the eyes swells.

The respiration deeper than, &c.] In the time of sleep the respiration is more increased; and being stronger than usual in the apoplexy, such respiration denotes sleep to be sounder than natural, and to incline towards an apoplexy. But a compression of the alæ of the nostrils, shew a beginning palsy in the muscles of the face, by which the alæ are kept up. And frequently the first signs of an approaching apoplexy are conspicuous in the face, the muscles being weakened on one side of it, while those on the other side are contracted, which changes the countenance surprisingly.

Incubus.] All who have suffered this complaint agree, that in the time of sleep they feel great anxiety, with a sense of incumbent weight, together with an inability to move or speak. I have known this disease happen by sleeping upon the back, by sleeping upon the side with the neck bent forwards, or reclining backwards. Perhaps when the head is reclined too much backwards, the whole weight of the brain presses upon the lateral sinuses, and the torcular of *Herophilus*; and when the head is bent forwards, the free return of the blood by the jugular veins is hindered, and thence the action of the brain disturbed. But an incubus arising from this cause, is not of much consequence; but when it proceeds from a morbid cause, as from lymph gradually collected in the head, then it frequently returns, and threatens an apoplexy. “Wherefore *Ætius*” advises to check this complaint at first; for if it is

^a Lib. vi. cap. 22.

Aph. 1021, &c. Of the APOPLEXY. 173

“ suffered to go on, it will occasion either an epilepsy, mania, or apoplexy, by a thick humour collected in the ventricles of the brain.”

A P H. MXXI.

AN apoplexy is easily known, but care should be taken to distinguish the different degrees of it.

How this is known was explained at Aph. 1013, 1015, 1016.

A P H. MXXII.

TH E R E can be no general cure prescribed for this disease; for it ought to be varied according to the variety of the cause, (1010.) and the nature of the part affected; and it should likewise be applied before the disease has got to a head.

It appears from Aph. 1010, that the causes of an apoplexy are so various, as frequently to require quite opposite remedies. Hence the medicines cryed up for the cure of apoplexies, and sold to great persons at an exorbitant price, as they all consist of hot aromatics, volatiles, alkaline salts, and the like, must be extremely hurtful, when this disease arises from a plethora, or an inflammation. Besides, if a tumour should compress the jugular veins, it would be in vain to apply remedies to the head, as the cure depends upon removing the tumour. But as a slight apoplexy is difficult to cure, it is evident enough that it ought rather to be prevented, if possible, or, at least, to use every proper means in the beginning; for, after the disease has gathered strength, it will soon become fatal; or if the patient escapes with his life,

174 Of the APOPLEXY. Aph. 1023, &c.
life, the functions of the *common sensory* will hardly
ever be entirely restored, but he will live miserably
afterwards. It is therefore proper to describe the cure
according to the different classes of the causes.

A P H. MXXIII.

IF therefore we see, by the symptoms enumerated at Aph. 1010. No. 2. let. c. that an apoplexy is threatened from a viscid, inert, and cold cause, we must immediately endeavour,
1. To divert the pressure of the glutinous matter from the head, 2. To attenuate the lentor in the brain, and in the whole body.

A P H. MXXIV.

THE pressure upon the vessels of the brain is diminished, 1. By diverting it to other, and opposite parts of the body; 2. By universal evacuations.

Each of these shall be considered separately in the two following aphorisms.

A P H. MXXV.

VAPOUR baths, fomentations, warm bathing, dry cupping, epispastics, sinapisms, caustics, issues, setons, frictions, and ligatures on particular parts, and upon the large veins of the feet, legs and thighs, lessen the pressure upon the vessels of the brain. Mouth-washes, gargles, masticatories, sialagogues, apophlegmatisms, applied to the mouth, fauces, and nostrils, answer the same intention.

All

All these remedies have been treated of before in comment to Aph. 396. No. 4, and 134; and in the *Materia Medica* there are proper forms of each.

A P H. MXXVI.

VOMITS, and strong purges, given so as to produce a certain effect; scarifications, and bleeding, answer the second intention, Aph. 1024; although they are always attended with some uncertainty.

Evacuations, of all kinds, lessen the pressure of the fluids upon the vessels: but it ought to be considered whether they are always proper, and of what kind. In this kind of apoplexy the body is always turgid with viscid pituitous humours, and it is often attended with a vomiting of phlegm. In this case a vomiting does not appear improper. But in the act of vomiting the humours are driven in greater quantity, and with greater force towards the head; which effect is repugnant to the first indication of diverting the viscid matter from the head. See Aph. 1023. It is therefore justly said in the text, that these are always attended with uncertainty. For this reason *Aretæus*^a does not commend vomits in this disease; but he speaks in praise of purges.

Purgatives therefore seem to be more safe, as they determine the quantity and force of the humours downwards, and a slight apoplexy is sometimes spontaneously cured by a looseness. But strong purges are directed, that they may produce a certain effect, and evacuate plentifully. In the *Materia Medica*, under the present aphorism, there is prescribed an efficacious cathartic, which will be of service, as it both resolves and evacuates the morbid matter. Two hours after taking of the purge, an acrid clyf-

^a Lib. i. cap. 3. pag. 30.

ter is to be injected, that the operation of it may be the sooner promoted.

But bleeding seems to be more uncertain, as to its effects, than the other evacuations; nay, it hardly appears to be of any use at all, as it appears that the red part of the blood is deficient in these patients; and from this cause arise that languor and numbness, and accumulation of lymph in the cavities of the body; whence the whole train of symptoms enumerated at Aph. 1010. No. c. was deduced. Yet there is nothing more common in practice, than for physicians to have immediate recourse to bleeding, whenever an apoplexy is threatened, and even suffer in their characters, among the ignorant vulgar, if they neglect this remedy. But if it is considered, that evacuations are only useful, when they either remove the morbid matter, diminish the quantity of good blood in plethoric habits, check the rapidity of the circulation, or divert the force of the humours from the parts affected, to other parts of the body, it will easily appear, that much good cannot be expected from bleeding in this case. *Aretæus* judiciously advises, "That when one is seized with great coldness, numbness, and a privation of senses," bleeding ought by no means to be ordered; but then he had recourse to acrid clysters and purgatives, both to free the intestines of their load, and to make revulsion of the humours from the head. Hippocrates likewise says, "That letting of blood in a cold numbness is bad." The same is true of scarifying and cupping; which may be of use by making revulsion, but by evacuating the blood, hurtful.

* Lib. i cap. 4. pag. 81.

A P H. MXXVII.

BUT the lentor, after using the methods directed in the three preceding aphorisms, is dissolved by the general remedies prescribed for the cure of a spontaneous gluten at Aph. 75, prudently administered, and applied to the head in every form : but blisters raised by cantharides, are above all the most beneficial, and insects, of the same kind, taken inwardly.

We come now to the other part of the curative indication, namely, to attenuate the lentor in the brain, and in the whole body. We have already treated of the *gluten spontaneum*, and mentioned every thing necessary to the cure of it, both with regard to diet, medicines, and exercise. But as stimulants and exercise are there recommended, there is need of great judgment in the cure of this cacochymy, when the symptoms shew that the functions of the brain are disturbed ; for if you suddenly move the humours before they are sufficiently attenuated, they will stick more obstinately in the extremities of the vessels ; and all the complaints will be increased. For this reason revulsive remedies ought first to be applied, that the pressure may be diverted from the head ; and, at the same time, a part of the viscid phlegm may be carried off by evacuants. We must begin with gentle dissolvents, especially with those which powerfully resolve, and at the same time do not suddenly increase the force of the circulation ; such are *sapo venetus*, *tartar. tartarifat.* *tartar. regenerat.* and the fixed alkaline salts of the ashes of plants. When these have been sometimes used, and the symptoms become milder, we then know that the lentor is attenuated, and that more acrid dissolvents may safely be used ; together with roborants, which correct the

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laxity of the solids, a constant attendant of this kind of cacochymy. In the *Materia Medica*, at Aph. 75, all these remedies are ranged in their proper classes. Likewise, the head may be shaved, and fomentations and epithems of the same kind of medicines applied to it, that by all these means the lentor may be attenuated, both in the whole body, and in the brain, — Blisters are here of the greatest service, not only by stimulating the part to which they are applied, but also by dissolving the lentor of the fluids, and increasing the motion of the blood. Insects, which have a like quality, but in a gentler degree, given inwardly, answer the same intention; such as milpepedes, cochineal, &c. But the internal use of cantharides is justly suspected; and therefore seldom prescribed by prudent physicians.

A P H. MXXXVIII.

IF an apoplexy arises from the causes enumerated at Aph. 1023, it is seldom cured; but if the patient's strength will bear it, the same remedies directed at Aph. 1023 to 1028, ought to be tried. Every thing that can rouse the senses, must be applied to the nose, mouth, and head; all the most acrid stimulants are to be used, and the bowels loosened with a sharp clyster.

As it is difficult to prevent an apoplexy from a viscid glutinous cacochymy, there must be still less hopes of curing it already produced. But the patient must not be left to his fate, while there is something still to be hoped from the use of medicines. Wherefore we must attempt a sudden revulsion from the head, by the remedies directed at Aph. 1025, and especially by blisters. But as such apoplectic patients can hardly swallow any thing, the chief hope remains

remains in giving of acrid clysters to empty the bowels quickly and effectually. From this remedy *Aretæus** expected both a diminution of the humours, and a revulsion from the head. In the *Materia Medica* there is a formula of an acrid clyster; and one of the same kind may be prepared from the roots of black hellebore; an ounce of which, boiled in water, affords a very powerful remedy.

Besides, it is usual to apply the most acrid stimulants to various parts of the body, in order to rouse the stupified senses. Some apply volatile spirits of sal ammoniac to the nose; some recommend the strongest vinegar, mixed with tincture of castor. Some apply to the temples, or rub the nose, with apoplectic balsams, prepared of the most pungent distilled oils; and besides blisters, they apply to the feet sinapisms of mustard and horse-radish. In short, there is no disease in which the patient is so roughly handled, and indeed with so much reason; for they are at once either rescued from imminent danger by the use of these means; and if they do not succeed, the patient suffers no manner of pain, being destitute of all sensation.

A P H. MXXIX.

HOWEVER, by the use of these the disease is often increased, the morbid matter being more moved, and impacted in the vessels by all stimulating medicines, and by evacuants, the strength is quickly impaired. Hence, in dissolving the fluids, we should always, as much as possible, endeavour to evacuate and revel from the head; whence the rule, that *venesection, if it does not quickly relieve, kills*.

* Lib. i. cap. 4. page 81.

All judicious physicians agree, that the cure of this disease consists either in evacuating the matter of the disease, or in attenuating the same, so as to render it capable of passing through the vessels. It would be best of all, if these could be brought about at the same time; seeing the present danger admits of no delay; and while these are doing, the pressure of the glutinous matter should, by all possible means, be diverted from the head. But moderate bleeding, though the blood does not abound, may certainly be ordered, and chiefly with this intention, that stimulants may be more safely applied after, and with less fear of a sudden rarefaction of the humours, which would be hurtful in this case.

A P H. MXXX.

BUT if by the signs enumerated, at Aph. 1010. No. 2. l. b. No. 3. l. a. and c. we foresee an apoplexy coming on, we must immediately have recourse to such remedies as most quickly empty the vessels, resolve the concremented fluids, and make a revulsion from the brain. 1. Therefore blood must be let as soon as possible, in a large quantity, and rather from the jugular veins, and repeated as often as there is occasion; for after it, if the disease is curable, the patient commonly finds immediate relief. 2. Then a strong antiphlogistic purge must be given, and several times repeated, so as to produce an artificial diarrhæa; but if the purge does not operate soon enough, it ought to be quickened by an acrid clyster. 3. Then, through the whole course of the disease, cooling, diluting, attenuating, and diuretic medicines, are to be given. 4. At the same time

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strong

strong repellents ought to be added, until the disease is quite overcome. 5. The patient's diet and drink ought to be very thin and light. 6. He must carefully avoid every stimulating and heating medicine, external heat, lying in bed, especially flat upon his back.

1. In the sanguine apoplexy, of which we now treat, where the blood abounds in the whole body, or, at least, in the vessels of the brain, plentiful bleeding can hardly ever be hurtful. For upon this operation the symptoms usually abate, if the vessels of the brain are not yet burst, or the tender nervous vessels too much compressed. But the fulness, hardness, and celerity of the pulse, will direct the prudent physician what quantity ought to be drawn, and when to be repeated. Bleeding in the jugular veins has been more particularly recommended by physicians, because thereby the vessels of the brain are immediately emptied: but as it is usual to tie a fillet round the neck when the jugulars are opened, if the vessels in the brain are full, there is danger of their bursting; it seems safer first to empty the vessels by bleeding in the foot or arm, and afterwards to open the jugulars.

2. Purgatives are of great efficacy, both in curing and in preventing this disease; as they evacuate and revel from the head at the same time. But in the sanguine and hot apoplexy, such purges are proper which move the body briskly, without increasing the motion of the humours, and dissolve the inflammatory thickness of the blood. These are called antiphlogistic purges. A decoction of senna with tamarinds, is usually given in this case; and if it does not operate soon enough, the larger intestines are to be stimulated by an acrid clyster of nitre, or sal gem, with oxymel simplex. It is even of great benefit to promote an artificial looseness for several days,

182 Of the APOPLEXY. Aph. 1031, &c.
days, by the use of such purges, given in smaller doses, till the heat of the body abates, and the fullness of the vessels is lessened.

3. Cooling and diluting medicines are here ordered; because this disease attacks plethoric persons of a hot constitution, and whose blood is rendered viscid by an inflammatory lentor.

4. As bathing the feet in warm water, gentle frictions, cupping-glasses, and mild epispastics. But as blistering plasters by their stimulus frequently increase the motion of the humours, they are not quite so proper; and if they should be applied, it ought only to be done after the above evacuations.

5. The same diet is necessary here that is directed in the cure of inflammations, at Aph. 396. No. 5.

6. Because all these remedies increase the motion of the fluids, and heat at the same time. Lying in bed, especially when covered with the bed-cloaths, is likewise bad for the same reason. See what was said of the usefulness of an erect posture in the cure of a phrensy, at Aph. 781.

A P H. MXXXI.

BUT if the apoplexy has already seized the patient, there will scarce remain any hope; and that only in using the remedies recommended in the preceding aphorism,

A P H. MXXXII.

BUT that apoplexy which arises from extravasated fluids, between the cranium and the membranes, or between the membranes themselves, from a wound, contusion, fracture, or suppuration, was treated of in speaking of wounds of the head, at Aph. 268, 273, and 297.

A P H.

A P H. MXXXIII.

THE apoplexy produced from liquids extravasated in the interior cavities of the brain, Aph. 1010. No. 4, and known by the signs there mentioned, scarce admits of a cure, seeing, for the most part, certain death presently follows. If any thing be tried, the only hope is, 1. From the resorption of the extravasated fluid into the veins, Aph. 279, 280. 2. From correcting the prevailing acrimony, and the lentor at the same time; which is most happily effected by saponaceous chymical medicines.

Such an extravasation arises either from a rupture of the over-distended blood vessels, or from their being eroded by the acrimony of the humours. See what has been said of these saponaceous chymical medicines, at Aph. 54 and 135. But as these act upon humours moved within the vessels, or obstructed in their extremities, it does not seem probable that they can have any considerable effect upon humours extravasated; and are therefore rather useful in preventing an apoplexy, than in curing one, when it proceeds from a glutinous lentor,

A P H. MXXXIV.

THAT which arises from extravasated lymph is more easily cured, and without bleeding, (which, in this case, is almost always hurtful) by the strongest hydragogue purges; and likewise by dissipating applications; but especially by large blisters, kept running a long while,

while, by a drying diet, by strong drawing plasters, by issues, and by seatons.

An apoplexy arising from mere lymph extravasated in the cavities of the brain, affords more hope of a cure; for the thin lymph is much more easily absorbed by the bibulous veins, than blood, which even thickens by being extravasated, and which can never be resorbed by the veins, unless it is diluted by the lymph, and thus rendered fit for absorption. Strong hydragogue purges are here of signal service, which ought to be given in large doses, and frequently repeated. If the patient cannot swallow the purge, a quadruple dose of the same given in a clyster, will produce the like effect. At the same time, it will be of service to apply to the head bags of cephalic herbs; such as rosemary, sage, penny-royal, marjoram, thyme, &c. which, by their aromatic stimulus, move and excite the languid humours; whence they are called dissipants.

A P H. MXXXV.

BUT if an apoplexy is occasioned by poisons, there is no remedy hitherto discovered able to cure it, nor that which is produced from a polypus.

Poisons were reckoned, at Aph. 1010, amongst the causes of an apoplexy, which, in a moment abolish all the animal functions, and even sometimes destroy life itself, while the body is exposed to the vapour of them. I know of no remedy that can rescue one from such imminent danger. But when an apoplexy arises from poisons, while they remain in the stomach, they may easily be expelled by a quick vomit. Half a drachm of white vitriol, diluted in two ounces of water, is in this case a present remedy, as

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it immediately acts as soon as it is swallowed. Neither ought those, who become apoplectic with the vapour of charcoal, to be intirely despaired of. For *Wepfer* tells us of a person who had lost all his senses from this cause, and had even the apoplectic snoring, recovered by means of cold water thrown upon his face and breast. There is a very remarkable case of a man struck down by a poisonous vapour in going down to a coal-pit; who was restored to life, though he remained in the pit above half an hour before he could be brought up; and then lay with his mouth gaping, his eyes open, quite cold, and without either pulse or respiration. See *Med. Essays*, Tom. v. Obs. 55. part 2d.

But that apoplexy produced by polypous concretions, obstructing the arteries which go to the encephalon, admits of no cure.

Of the CATALEPSY.

A P H. MXXXVI.

THAT disease, in which the patient is immediately struck motionless, insensible, and retains the same posture which he was in the very moment he was seized, is called catocche, catochus, and catalepsis, or a catalepsy.

The pathognomonic sign of this disease is, that the patient remains motionless and insensible, in the same posture which he was in, when he was first seized; but there are some varieties to be observed here. For the most part, all the joints remain flexible; and in whatever posture the limbs are put, they remain so till they are placed in some other. For example; if the arm is raised up, it remains so; or, if the fingers are bent or extended, so they continue. By this

this the catalepsy is distinguished from an universal tetanus, in which the joints are quite rigid, and can neither be bended or extended by any force.

A P H. MXXXVII.

THEREFORE the proximate cause of a catalepsy is an immobility of the *common sensory*, remaining in the same state it was in the first moment of the attack.

In this disease the *common sensory* is certainly not affected by objects acting upon the organs of the senses, neither does it change the derivation of the cause of muscular motion, while the paroxysm lasts. I have seen a woman seized with it when she was standing, in which posture she remained, and therefore all the muscles which sustain the body erect, persisted in performing their office; and in this respect it differs from an apoplexy, in which all the voluntary muscles become paralytic, and the patient falls down, being unable to support himself. We may indeed, at the command of the will, remain immoveable for some time in almost any posture, and thus imitate a catalepsy, but we cannot hinder the organs of the senses from being affected by sensible objects. But there is something surprising in a catalepsy, namely, that all the internal and external senses are abolished, while the efficacy of the cause of muscular motion still remains; but the power of changing the direction of that cause is wanting; whence all the members continue in the same situation they were in, the moment the patient was first seized,

A P H. MXXXVIII.

THEREFORE, there is in this disease an absolute rest of the blood in the cerebrum, its glands, and emissary vessels.

A P H. MXXXIX.

IN this disease all the functions of the brain are hurt, and those which depend upon them: only the muscles remain in the same tension as in the beginning of the fit; but the pulse and respiration continue, yet, for the most part, weak.

A P H. MXL.

AN intermitting fever of long continuance, especially a quartan; a melancholic, dry, lean habit of body; an obstruction of the menses, and hæmorrhoids; violent and sudden frights; profound and long continued meditation upon the same object; violent fevers in persons of a sanguine constitution, commonly precede this disease.

Intermitting fever of, &c.] That tedious intermitting fevers may weaken the vessels, and render the fluids morbid, was fully demonstrated at Aph. 753, where we treated of the bad effects of these fevers. But that the functions may be disturbed from such an enervation of the solids, and ill state of the humours, easily appears. Nay, Dodonæus* ob-

* Medic. Observat. pag. 7.

served a catalepsy in the very paroxysm of an intermitting fever. Besides, as thick blood, strongly impacted in the vessels of the brain, has been found in those who have died of this disease, and as the blood in long continued intermitting fevers is inspissated, the reason appears why these fevers are enumerated among the signs which commonly precede a catalepsy.

A melancholic, &c.] Because in such habits the vessels are straitened, and the atrabiliary humours being too viscid, may easily obstruct the vessels of the brain, and so disturb the *common sensory*, as to produce a catalepsy. But it seems probable, that a catalepsy may likewise arise from causes placed without the brain, and the following case seems to confirm it. A woman forty years old, and of a lean habit, while she was roasting chesnuts, was seized with a true catalepsy. I was immediately called, and while I was there, she suddenly vomited up two live round worms, and presently went on in the work she had begun, quite unmindful of what had happened. I saw her in good health several years after, and she never had any return of the disorder afterwards. Those worms irritating the stomach by their crawling, without doubt produced the cataleptic fit, which immediately ceased, as soon as they were thrown up.

An obstruction of the menses, &c.] That the hæmorrhoids are of service in curing diseases of the head, and that many complaints of the head may arise from a suppression of this discharge, has frequently been mentioned before, and the same is likewise true of the menses.

Violent and sudden frights.] See what has been said on this subject at Aph. 104. But in a violent fright, a man is affected in the same manner as in a catalepsy; for he is stupified, struck dumb, and motionless, and if that affection of the mind happens to be powerful, the impression remains, and a perfect

fect catalepsy is produced. Tulpius^a relates a case of this kind in a British youth, who was so shocked at an unexpected repulse in marriage, as to be immediately seized with a catalepsy, in which he remained a whole day. But upon calling out to him aloud, that he should have his desired wife, he immediately jumped off his chair, quite free from the disease.

[Profound — meditation, &c.] Men of learning immersed in profound meditation; perfectly resemble cataleptic persons; for all the senses are at rest, the memory is effaced, the whole body is entirely still, and the mind wholly intent upon one and the same object. This they have called extatic thinking. By this eager attention of the mind, the common sensory is so fixed, that a disposition to a catalepsy is induced. *Galen* ascribed this disease in his fellow student to too much study, and *Fernelius*^b observed the same. Neither is the catalepsy peculiar to those only who emaciate themselves with study; for the celebrated *Hoffman* saw this disease in a woman of low condition, and void of education.

[Violent fevers, &c.] In plethoric persons the blood is rarefied by the febrile heat, and the circulation at the same time increased, by which the larger vessels of the brain may be so filled, as to compress the lesser, and thus all the functions of the encephalon may be injured, but I cannot say that I ever saw a true catalepsy in those labouring under an acute disease.

A P H. MXLI.

THE dissection of bodies who have died of this disease, demonstrate that the arteries and veins of the brain are distended with thick blood forcibly drove into them.

^a Observ. Medic. lib. i. cap. 22. ^b Patholog. lib. v. cap. 11. pag. 70.

The dissection of dead bodies is of very great use in discovering the causes of diseases; but there is need of great caution here, lest that should be taken for the cause, which is rather the effect of the disease. See Aph. 11.

A P H. MXLII.

IT is frequently cured by a plentiful bleeding from the nose.

Viz. When it arises from too great a distention of the blood-vessels of the brain, or from a suppression of other evacuations.

A P H. MXLIII.

IT seldom changes into other diseases; yet sometimes it is succeeded by an epilepsy, convulsions, madness, and an atrophy: but for the most part it proves fatal.

A P H. MXLIV.

THE cure is to be varied according to the variety of the cause. By rousing the patient by such objects as act powerfully upon the organs of the senses, such as light, sound, a stimulus, acrid volatile salts, pain, friction, and continued motion; by procuring a bleeding from the nose; by encouraging a flux of the menses, or hæmorrhoids; by sternutatories, vomits, blisters, issues, seatons, and by a moistening diet.

The cure is to be attempted either in the paroxysm, or out of it. While the paroxysm continues, physicians

ficians used to try by acrid stimulants to change that disposition of the common sensory, which is then present, and suppresses every action of the senses. But here great caution is required; and Hoffman has prudently advised to abstain from the hotter stimulating medicines, if the catalepsy arises from too great an orgasm, expansion, and stagnation of the humours. Neither do the like medicines seem safe in hysterical persons, who are seized with a catalepsy; for when such powerful stimulants happen to rouse the patient, they occasion strong convulsions, which are equally to be dreaded, and perhaps more hurtful than the catalepsy itself. Nay, I have learnt from my own observations, and those of others, that these have but little effect. For upon placing fire under the feet of a cataleptic woman, she was not roused out of the paroxysm. Hence when gentle stimulants, and frictions have no effect, I should hardly advise the use of stronger remedies. For the *common sensory* being quite oppressed, they are of no service, and frequently hurt the organs of the senses; or if they happen to rouse the patient, they surprisingly disturb the whole nervous system.

When the paroxysm is over, the cure ought to be varied, as the cause of the disease may require. For if the cause be too great a quantity, or rarefaction of the blood, bleeding is necessary, and ought to be repeated. If from a suppression of any usual hæmorrhage, that ought to be restored by proper remedies. By what means a bleeding of the nose is to be promoted, we have already treated at Aph. 741, and 779. In what manner the hæmorrhoidal flux is to be managed, was explained at Aph. 389. No. 2. Of a suppression of the menses we shall treat hereafter at Aph. 1283, & seq. But bathing the feet in warm water, epispastic or aromatic plasters applied to the soles, and frictions of the legs, will always be of service.

In melancholic, dry, and lean habits, evacuations of blood would be hurtful; but a moistening diet, and mild resolvents of honey, whey, and ripe fruits, &c. will be beneficial, of which we shall treat at large, when we come to the chapters of melancholy and madness.

But when a catalepsy arises from strong affections of the mind, or from profound and long continued meditation, the only remedy is travelling, to divert the mind with a variety of objects.

Sternutatories are usually recommended; but *Fleets*^a blew into the nostrils a medicine of this kind without success. However, when the patient recovered himself, he began to sneeze, and discharge a great quantity of phlegm: but these remedies are only useful in particular cases. Vomits are only of service when the cause of the disorder is lodged about the stomach; but the same cautions are to be observed here, which were given in the cure of an apoplexy, at Aph. 1025; where we likewise treated of the efficacy of blisters, issues, and seatons.

Of a CARUS.

A P H. MXLV.

A Carus is a slight apoplexy, but a very sound sleep, attended with a fever, arising from causes chiefly compressing the brain, which as yet remains unhurt (Aph. 1010. No. 3. let. a, b, c, d,) or from obstructing causes, but such as are more easily removed than in an apoplexy (1010. No. 2. let. b, c.) In this disease there is some perception, but momentary; some sense, but in a slight degree.

^a Observat. Med. lib. i. Obs. iii.

Natural rest is called *sleep*; which is longer or shorter, more or less sound, as the preceding causes, or the custom, or habit of the patient, prevail: But if sleep exceeds the natural bounds, it ought to be looked upon as a disease. If a person is very sleepy, and almost constantly nodding, yet frequently awakes of himself, and is easily roused by external causes, and then, at least, while he is conversing with his friends, keeps awake, and is sensible, this kind of sleepiness is called a *Coma*. But if he hardly ever awakes of himself, and is roused with much more difficulty by external causes, and almost instantly falls asleep again, in spite of all that can be done to prevent it; while, at the same time, there are no signs of a cold phlegmatic lentor, it is called a *Carus*. If he is so sleepy as to become stupid, and almost unmindful of every thing, with all the signs of a cold phlegmatic cacochymy, it is called a *Lethargy*. But if neither naturally, nor by the most powerful external causes, long applied, he cannot be roused, but only shews some slight signs of sense and motion, it is called a *Parapoplexia*. If neither of these signs appear, and the limbs become paralytic, it is termed an *Apoplexy*.

Although a *Carus* is a slight kind of apoplexy, it ought to be carefully distinguished from it, because it may be entirely cured; which seldom happens in an apoplexy. *Duretus*^a and *Jacotius*^b have remarked that, in a *carus*, the respiration is more easy, and the stertor considerably less than in an apoplexy.—It is likewise with difficulty distinguished from a *lethargy*; and *Galen* has called the *lethargy* and *carus* the same disease. But, perhaps, for the sake of mere distinction, the name of *carus* might be retained, to signify a profound sleep in acute fevers, and other diseases, wherein the quantity of

^a In Coac. Hippoc. page 99. ^b Holler, Comment. in Coac. page 280.

blood is too great, or too much rarefied, or wherein there is an inflammatory spissitude; and that of lethargy, when such a profound sleep is produced from a mere glutinous indispotion of the blood.

But as a carus arises from the like causes with the apoplexy, only more gentle, it does not seem to be void of danger, although it is frequently cured. Hence Hippocrates pronounces a profound sleep to be bad in all diseases; yet in his predictions he puts it by way of question; and justly, because it is not always a bad sign. For a carus following long watchings in diseases, rarely prognosticates any mischief, and for the most part is of service.

A P H. MXLVI.

HENCE, after the cure of a carus, the patient recovers his health, except that a shaking of the head remains for some time.

Sydenham saw an epidemical constitution, in which a carus most remarkably prevailed, as it continued for several weeks, and the sleep so profound that the patients were roused with the greatest difficulty. But, by means of gentle bleedings, clysters, and by moderating the force of the fever, almost all the sick recovered, the disease going gradually off. Yet those who were in a convalescent state had a shaking in their heads, with other symptoms; which shewed that this part had suffered a great deal. But younger persons were more subject to a delirium, which never arose to that degree of violence as to produce a phrensy. Hence it appears, that the morbid matter in this disease, seizing the brain, either by compression, deadened the actions of the common sensory, only less than in the apoplexy, or else by irritation disturbed them, but more gently than in the phrensy;

Aph. 1047, &c. Of a CARUS. 195

and hence again it is apparent that a carus is a slight kind of apoplexy.

A P H. MXLVII.

THE cure of a carus is to be taken from that of the apoplexy, delivered at Aph. 1020, & seq.

After moderate evacuations, whatever derives the impetus and quantity of the humours from the head, are here proper; such as clysters, blisters, and pediluvia. At the same time the patient must get out of bed every day, at least for some hours, and sit upright in a chair; or, if he is too weak to sit up, he must lie upon the bed with his cloaths on, and his head raised pretty high. His diet should be thin, and all heating and irritating medicines must be avoided.

A P H. MXLVIII.

THE coma vigil, coma somnolentum, and cataphora, seem only to be slighter kinds of a carus. See Aph. 703 to 710.

A P H. MXLIX.

BUT a lethargy is a slighter kind of apoplexy, produced from a cold, viscid, watery cause; therefore the knowledge and cure of it is to be learnt from the history of the apoplexy, given at Aph. 1008, and the following.

OF CHRONICAL DISEASES.

A P H. ML.

HAVING thus gone through the principal acute diseases, both internal and external, we come now to treat of those which are chronical. These, if bred in the body, derive their origin either from the humours gradually vitiated, or from the morbid remains of acute diseases that have not been perfectly cured.

Although we here only treat of causes arising within the body, that give rise to chronical diseases; yet there are likewise other causes, not pre-existing in the body, which, when applied to it, are very apt to produce the worst kind of chronic disorders.

Thus a compression of the head, in new-born infants, and even in children grown up, has frequently been the cause of ideotism, and convulsions during life. Tying the collar too tight has produced a frequent bleeding at the nose, and a lasting head-ach. Luxations of the vertebræ have often occasioned incurable palsies, asthmas, &c.

But, perhaps, it may appear surprising, that there is no mention here made of the solid parts, seeing that, by faults in them, chronical diseases may be produced. But it must be considered, that we are now speaking of long continued diseases, and that diseases of the solids can never remain long without being followed by morbid degenerations of the fluids. For too great laxity of the solids, produces a spontaneous corruption of the fluids, as was remarked at Aph. 26—54. Too great rigidity, either suppresses all motion, or dissipates the most fluid particles of our humours :

humours : but a solution of continuity in the solids, produces an extravasation of the humours, and a spontaneous corruption of them afterwards. Hence the reason appears, why the above general division of the causes of chronic diseases is sufficient ; and of each of these we shall treat separately.

A P H. MLI.

DEFFECTS gradually produced in the fluids arise, I. From things taken into the body, as air, meat, drink, spices, medicines, poisons, so different from the nature of our humours, and so strong, as not to be assimilated by the force of our viscera and humours. These are,
 1. *An acid acrimony*, (Aph. 60.) 2. *An austere acrimony*, formed by the union of an acid and earthy principle, like that in unripe fruit, or astringent juices, wines, and the like ; which coagulate the fluids, constrict the vessels, and occasion hard obstructions. This is cured by diluents, by fixed alcalis, and saponaceous alkaliescent medicines, long continued, and judiciously exhibited. 3. *An oily aromatic acrimony*, owing to meats, drinks, and spices, which are hot to the taste and smell ; these produce heat, attrition, and an erosion of the small vessels, burning pains, an attenuation, putrefaction, and extravasation of the fluids, and many such like effects : this kind of acrimony is cured, by watery, farinaceous, gelatinous, and acid remedies. 4. *A fat inert acrimony*, produced from a too liberal use of the fat of land animals, of fish, and oily vegetables ; hence an obstruction (Aph. 117.) a bilious rancidity, inflammation, corrosion,

rosion, and the worst kind of putrefaction (Aph. 82, 526.) It is cured by diluting, saponaceous, and acid medicines. 5. *A muriatic salt-ues*, from the use of salt, or salted meats; this destroys the vessels, dissolves the fluids, and renders them acrid; hence an atrophy, a bursting of the vessels, and extravasations of the humours, which do not quickly putrify, but produce spots. It is cured by water, acids, and a lixivium of quick lime. 6. *An alkali*, (Aph. 76—91.) 7. A glutinous or viscid quality, (69—76.) II. The fluids may be vitiated by the too great force of the viscera acting upon the *ingesta* (50—58. 92—106.) And (3.) From spontaneous morbid degenerations of our humours. See Aph. 58—91.

We need not add any comment to the above, as it is sufficiently explained in the aphorisms referred to in the text.

A P H. MLII.

FROM acute diseases badly cured, there arise morbid qualities in the humours in every part of the body: 1. From purulent matter, which produces many evils when it gets into the blood, Aph. 936. No. 4. 941. This is cured by such remedies as support the strength, resist putrefaction, and supply the fluid parts of the blood. See Aph. 942. 2. From ichorous matter, Aph. 158. No. 4. 206. the effect of which is to corrode and consume the vessels. This is cured by mild, softening, and inspissating medicines. 3. From putrefaction, Aph. 1051. No. 1. 1. 3. 6. No. 3.

The

The principal faults of the humours that arise from acute diseases, terminating in others, are the following.

1. From purulent matter.] No physical person will be surpris'd, that acute inflammatory diseases should produce abscesses in parts which they affect; setting suppuration is the consequence of a violent inflammation. But it was remark'd, at Aph. 593, that a quantity of pus may be suddenly collected in any part of the body, without the signs of a topical inflammation, or suppuration. When pus, collect'd in any part of the body, is resorpt by the veins, and mixed with the blood, how difficult it is to correct such a purulent cacochymy was observed before, at Aph. 406, 936, and 942.

Ichorous.] Good smooth pus is void of acrimony, and denotes a mild disposition of the humours. But in acute diseases, where the humours are rendered acrid, mild pus is not formed. Besides, ichor, properly so called, never changes into pus, but always becomes more acrimonious by stagnation. The cure here is the same with that directed in purulent diseases; namely, such remedies as strengthen the body, and resist putrefaction: but as the acrimony is here greater, demulgents, and gentle inspissants are likewise proper. Prescriptions of this kind are given in the *Materia Medica*, at Aph. 198. No. 2, 3. to which, if the roots or leaves of wood-sorrel are added, they will both resist putrefaction, and correct the too great thinness of the humours.

Putrid.] It has frequently been observed before, that the humours in acute diseases may become putrid, and that this putrefaction was greatly to be feared in the hepatitis.

A P H. MLIII.

ACUTE diseases ill cured in the solid or compound parts, leave abscesses, fistulas, empyemas, scirrhuses, cancers, and caries.—

Of all these we have treated in the first volume.

A P H. MLIV.

FROM these faults of the humours, either in simple, or various compound diseases, an almost infinite number of others may follow, as effects; which therefore are best known and cured from the history of those already explained.

If humours, thus gradually vitiated, are conceived to remain in different parts of the body, they will always disturb the functions of that part, and frequently likewise those of the adjacent parts, while either by their bulk they compress, or by their acrimony irritate, or corrode them; and therefore from such causes a great number of diseases may arise. Thus, if a pleurisy should terminate in a suppuration, the abscess formed in the side will compress the lungs, and obstruct the respiration. Sometimes likewise, such a purulent bag grows to the diaphragm, and the pus eating through it, falls into the abdomen; whereby the respiration is relieved for the present, but the event fatal; for there follows a purulent ascites, and a consumption of the viscera. If any one will apply these cases to every part of the body, he will not be surprised that chronical diseases, although very numerous, may be reduced to the causes abovementioned.

A P H. MLV.

SINCE therefore all chronical diseases depend upon these, the general doctrine and division of them is to be drawn from this source.

It

It must be of great service in practice, to reduce the causes of diseases into certain classes ; for if one attentively considers those causes, he will discover, even in the most intricate chronical diseases, what is to be done to remove, or at least to mitigate them. But although a great many arise from acute diseases not well cured ; yet a great many more are owing to an abuse of the six non-naturals.

A P H. MLVI.

HENCE likewise it evidently appears, that chronical diseases, though they are infinite, with regard to the variety of their symptoms ; yet they are not of so complex a nature as to their origin, nor do they require such variety of medicines, or methods of cure. At the same time is discovered the reason of the long continuance of most, and the impossibility of curing many others, as will appear in treating of them.

From what has been said it evidently appears, that in chronical diseases one ought chiefly to consider the variety of the morbid matter, the parts they invade, the functions they hurt, and the peculiar constitution of the patient. But the most wonderful symptoms arise when the common sensory, and the nerves depending upon it, are affected by a morbid cause ; as will appear when we come to treat of the epilepsy, melancholy, and madness. In the mean time it is plain, that the origin of chronical diseases is not so various as at first sight may be expected. I would therefore advise those who despise the simplicity of physic in many chronical diseases, to consider how many and how different disorders are cured by the use of hot baths and medicinal waters. If a simple dilution of the humours, or the washing away of a muriatic acrimony is required, the *Toplitz waters* will be sufficient.

ent. If an acid or austere acrimony predominates in the body, the *Selter waters* will be of service; which likewise drank with milk, are commonly so beneficial in a purulent cacochymy. If an atrabiliary matter loads the abdominal viscera, the *Caroline waters*, and others of the same nature, are of great use, both in dissolving and carrying it off. If strength is to be restored to languid bodies, and the action of the solids increased, *Spa waters* are drank with great success.

Besides medicinal waters, physicians place great hopes in the fresh juices of herbs drank plentifully in the spring, and for a long time continued; and likewise in whey, garden fruits, Venice soap, honey, &c. as they act without raising any disturbance in the body. Riding, frictions, and all kinds of exercise, are also necessary in the cure of chronical disorders. Hence the reason appears why chronical diseases, arising from morbid qualities of the humours, affect the patient by degrees, and cannot be removed but by a long protracted cure. Sydenham has judiciously observed, "that the habit of the body is to be intirely altered, and the whole man, as it were, quite renewed." Hence also the reason appears why many chronical disorders are altogether incurable; for if a purulent ulcer has consumed the lungs, liver, &c. who dares to promise a cure?—These things being premised, we now proceed to the history and cure of chronical diseases.

Of the PALSŶ.

A P H. MLVII.

A PALSŶ is called a lax immobility of the muscles, not to be overcome by any effort of the will, or of the vital powers: sometimes there

there is an absolute insensibility of the part; sometimes a small degree of feeling remains, with a numbness, and a kind of pricking sensation.

A Palsy is called a lax immobility of a muscle, to distinguish it from a tetanus; in which all the parts are rigid and inflexible. But there are muscular motions in the body, which are not subject to the command of the will, but depend upon that part of the brain, which serves for the spontaneous vital and natural motions; hence these muscles may become paralytic, and then their immobility cannot be overcome by any effort of the vital powers. See Aph. 162.

We learn from physiology, that some nerves serve for sensation, and others for motion; therefore the functions of the motory nerves may be hindered, while those destined for sensation remain unhurt; and the contrary. Hence frequently the sense of feeling remains in the paralytic part, although, for the most part, duller, and attended with a kind of pungent pain. Sometimes, though rarely, the feeling is entirely abolished, together with the motion, which is a very bad sign, as will appear at Aph. 1062.

A P H. MLVIII.

THE proximate cause of a palsy is always an intercepted influx of the nerves fluid from the brain, or of the arterial, into the paralytic muscle. See H. Boerh. Inst. Med. Sect. 401, 402.

A P H. MLIX.

A Palsy may therefore arise, 1. From every cause which produces an apoplexy (Aph. 1010.) 2. From whatever renders the nerve incapable of transmitting the animal spirits. 3. From whatever hinders the entry of the arterial blood into the muscles. Hence is understood the nature of a paraplegia, hemiplegia, and a palsy of a particular part.

1. As an apoplexy is an abolition of all voluntary motion, it may be considered as a kind of general palsy; and therefore every cause which produces the apoplexy may likewise produce a palsy. But the like causes, which, affecting the whole *common sensory*, occasion an apoplexy, may likewise produce palsies of particular parts, when only that part of the *common sensory* is affected that sends nerves to the paralytic part. Thus a palsy of the muscles, in either side of the face, frequently precedes an apoplexy, and a violent apoplexy usually terminates in a palsy of some muscular part, when the cause of the apoplexy is not entirely, but, in some measure, removed.

A P H. MLX.

THEREFORE a palsy may have for its cause an apoplexy, a slight parapoplexy (1009, 1010, 1015,) an epilepsy, convulsions, a violent and long continued pain, a retension of the usual evacuations followed with a vertigo; such as the hæmorrhoids, menstrua, abscesses, fistulas, stools, urine, and saliva; transfusions of any kind of morbid matter, either in
acute

acute or chronic diseases ; whatever injures the nerves by obstructing, breaking, compressing, binding, distorting, or constringing them ; and therefore gross humours, wounds, erosions, abscesses, mortifications, and inflammatory tumours in the coats of the nervous medulla, their ganglions, and in the nerves themselves ; serous, purulent, ichorous, and such like tumours in those parts ; strong and tight ligatures, fractures, and luxations ; very astringent aliments, medicines, and poisons ; hence violent cold, excessive heat, a cold and moist air, too plentiful and frequent use of hot water, the vapour of arsenic, antimony, quick lime, mercury, and of other poisons, may all produce a palsy.

In the preceding aphorism the general causes of a palsy are enumerated, in this the principal and particular causes, of all which we shall now treat.

An Apoplexy, &c.] Of this we treated a little before. But in the epilepsy, the brain is so much hurt, that it is no wonder a palsy should follow. The same is also true in convulsions, wherein there are such horrid distortions of the limbs, that both the common sensory and nerves, and likewise the fabric of the muscles are greatly injured ; and we sometimes find in practice, that children, after strong convulsions, become paralytic, and frequently remain so ever after, in spite of the most effectual remedies.

A violent and long continued pain.] For this threatens a destruction of the nerve. See Aph. 220, & seq.

A retention of the usual evacuations, &c.] These are either of a good and natural humour, only hurtful by being retained in the body ; or of an useless and morbid humour, which being retained, not only increases the quantity, but disturbs the whole body

by its vitious quality. The hæmorrhoids, menstrua, and wholesome saliva, belong to the first class; to the latter morbid saliva, and those evacuations which are made by stool, and urine, abscesses, and fistulæ. Thus people who live plentifully, and do not by exercise carry off the superfluous *ingesta*, if the viscera are strong, become plethoric. In such persons, that superfluity is sent off by the hæmorrhoidal vessels, and then they are very healthy. But if this evacuation stops, diseases of the head soon follow, amongst which a vertigo usually leads the van.

What dangerous diseases may arise from pus, or ichor collected in abscesses and fistulæ, and resorbed into the blood, was remarked before, at Aph. 406. A vertigo from this cause, may not only produce a palsy, but likewise a fatal apoplexy.

Stools are useless parts of our aliments, which, if long retained in the body, would be hurtful, as they soon become putrid; and the thinner parts being absorbed by the bibulous veins of the larger intestines, may be mixed with the blood, disturb the functions of the brain, and occasion a palsy. For this reason *Hippocrates* condemned costiveness in fevers, and likewise white stools. See Aph. 772.

A suppression of urine is still more dangerous, of which, when people die, such symptoms always precede as demonstrate the functions of the brain to be hurt.

A suppression of the usual discharge of the saliva, deserves likewise to be reckoned among the causes of the palsy. For as the organs which secrete and excrete the saliva receive their blood from branches of the external carotid artery, it is plain, that when the excretion of the saliva is hindered, the branches of the internal carotid must be more filled, and the blood which flows through the vessels of the brain, will not be freed of that viscid matter which is separated by the salivary ducts. Therefore, all the functions of the encephalon may be disordered from this cause

cause alone, and a palsy produced. For this reason physicians are always afraid of a delirium and phrenitis, when the patient's mouth is very dry in acute diseases.

[Translations of any kind of morbid, &c.] It appeared, in the history of fevers, at Aph. 593, that the morbid matter, after it was concocted, was not always evacuated, but sometimes deposited in various parts of the body, and produced another disease. If therefore a metastasis, or metaptoxis, of the morbid matter is made to the brain, the medulla spinalis, or to the nerves going out from thence, it easily appears, that a palsy must follow.

[Whatever injures the nerves by obstructing, &c.] These are the principal causes which are capable of hurting the nerves, and destroying their action.

[Very astringent aliments, &c.] As a palsy was defined a lax immobility of the muscles, it may appear at first surprising, that astringents, recommended for the cure of a lax fibre, should here be enumerated among the causes of the palsy. But astringents unite closely the particles which compose our humours, and therefore may occasion the most obstinate obstructions, and produce inflammations, if they are immediately applied to the nerves. It is true indeed, that astringent aliments cannot easily get into the blood, as they shut themselves out by constricting the mouths of the lacteal vessels; but it is certain, that these remedies, immediately applied to the nerves are capable of disturbing their action. The juice of acacia applied to the tongue corrugates it in such a manner, that the taste is lost for some time. An imprudent application of astringent medicines to the eyes, has sometimes produced an incurable blindness. Besides, we see the bellies of children swell who eat sour unripe fruits. But as by auster substances the aliments stick in the intestinal canal, and are not forcibly enough protruded towards the anus, it is plain, that their effects hinder the muscular action of the intestines; and thus astringents, though they may

increase

increase the cohesion of the solids, yet may affect muscular motion.

Violent cold.] It was demonstrated before, that our humours were congealed by cold, and that a sudden mortification, and even a sphacelus may follow from it; and therefore it is plain, that the nerves and muscles may be destroyed by cold alone. See Aph. 117, and 454. Hippocrates observed, "That the brain, and all the parts arising from it, were hurt by cold." And Galen saw the sphincters of the anus and bladder rendered paralytic by sitting long upon cold stones. In the human body we find a congeries of vessels, which carry warm red blood, distributed to the *medulla cerebri*, the *medulla oblongata*, and *spinalis*, and also to the nerves, to prevent the cold from hurting those tender parts, which could not be kept warm by the attrition of the fluids against these vessels.

Excessive heat.] Natural heat cherishes the nerves, and assists all their actions, but when it is too great, the fluid parts are dissipated, and what remains becomes thick, and apt to run into morbid concretions.

A cold and moist air.] Sanctorius * has observed, that cold, attended with moisture, hurts insensible perspiration much more than when it is dry; and elsewhere * adds, that in such an air the perspiration is converted into an ichor, which usually produces a cachexy. Hence likewise arise colds in the head, catarrhs, and such like disorders; in which a great quantity of humours is discharged by the nose, or spit up in the form of phlegm: but if that matter is retained, or collected near the larger nerves, or their origin in the brain or spinal marrow, it may hurt, or entirely destroy their action. For, from hence arises a collection of serous humours in the body; which Piso found to be a frequent cause of the apoplexy and palsy.

* Aph. 67.

* Aph. 146.

* Herm. Boerhaav. Instat.

Med. Scs. 74.

Too plentiful and frequent use of, &c.] It was demonstrated at Aph. 30, that watery substances weaken the solid fibres of the body, and at length so relax all the vessels and viscera, that a sufficient quantity of spirits requisite for muscular motion cannot be secreted. A like laxity is also occasioned by hot and moist air, if it continues long in that state; and *Hippocrates* remarks, that palsies were frequently epidemical after a south wind and rain.

The vapours of arsenic, &c.] That these poisonous vapours may occasion an apoplexy, and likewise a palsy, is evident from observation; for gilders, miners, chemists, &c. who are exposed to the vapours of these minerals, are frequently seized with palsies. Having thus discussed the cause of the palsy, we come next to consider the effects arising from it.

A P H. MLXI.

THE immediate (1058,) and remote cause, (1059, 1060,) of a palsy; and therefore the disease itself, arising from these, produces very different effects, according to the structure of the part, where that cause is lodged; the violence of the disease, and the use of the part affected, as it is more or less necessary to life; for from all these circumstances, the palsy may be reckoned more or less mortal, curable, or incurable.

From what has been said of the immediate and remote causes of the palsy, it appears that they may be lodged in different parts of the body. It is therefore necessary to enquire first into the seat of the disease, that both a just prognosis, and a proper method of cure, may be discovered. For instance, the cause of a palsy of the leg may be seated in the en-

cephalon itself, in the medulla spinalis, and in the great nervous trunk going out of the extremity of it. But very different effects are to be feared when the cause is seated in the brain; for it may be propagated to those parts of the brain which have a connection with other parts of the body, and produce new complaints; whereas, when the cause is in the crural nerve, it can only hurt the functions of those muscles to which this nerve is distributed. Besides, the cause obstructing the function of the nerve, may be seated in the coats only, or in the substance of the nerve; whence again a different prognosis arises, because the cause of a palsy, seated in the coats of the nerves, may be removed by art; but when it is in the substance of the nerve, it hardly ever admits of a cure.

But from the magnitude of the cause, another prognostic arises. Thus if one of the vertebræ of the loins is only a little removed from its natural situation, there remains hope of a cure: but if it be forced a good deal inwards, the medulla spinalis is frequently quite destroyed; and then a cure cannot be expected. A palsy from a plethora is sooner cured than one from serous humours collected in the brain.

The effects of a palsy likewise vary according to the use of the part which it attacks. Thus a palsy of the arm may be much longer endured than one of the intestines, &c.

A P H. MLXII.

A P A L S Y of the heart, lungs, of the muscles, inservient to respiration, and of the gullet, is quickly fatal; of the stomach, intestines, and bladder, from internal causes, very dangerous; of the muscles of the face, bad, and easily changed into an apoplexy. A paraplegia is very dangerous, the forerunner of an apoplexy,

plexy, which coming upon it, is fatal ; an hemiplegia is bad, akin to the paraplegia ; and, when an apoplexy follows, proves mortal ; a palsy that is attended with a coldness, insensibility, and wasting of the part, is bad, and seldom curable ; that with a strong convulsion, and a great heat in the opposite part, is also bad : but, from the contrary symptoms, we know which kind of palsy is curable, and which least dangerous ; and also what is so often the cause of a sudden and unforeseen death, without almost any concomitant symptom.

[Of the heart.] As the heart is a true muscle, and acts with a muscular force, it may suffer a palsy, like all the rest of the muscles, when the cause of muscular motion is hindered. The heart, in a *syncope*, is truly paralytic, that is, in a state of lax immobility ; but as it is stimulated by the return of the venal blood into its cavities, so as to be contracted anew, that palsy which was begun, is frequently removed, and many who have fallen into a syncope have been recovered by frictions, cold water sprinkled upon the face and breast, and stimulants held under the nose, &c.

[Lungs and muscles subservient to, &c.] As the alternate contraction and dilatation of the lungs is requisite to allow a free passage for the blood from the right ventricle of the heart, to the left, it is plain, that life must be in danger when their muscular fibres become paralytic ; the same is likewise true when the muscles subservient to respiration are seized with a palsy.

[Gullet.] See what was said of a palsy of this part, in the comment to Aph. 785, and 818, where we treated of a quinsy arising from this cause.

Of the stomach, intestines, &c.] If the fibres of the stomach become paralytic, all the action of the stomach ceases, and no longer changes the aliments by its proper efficacy. But as it receives its nerves from the two trunks of the par vagum, it is evident why a palsy of the stomach is dangerous, when it arises from internal causes, lest the cause of it should be lodged in the brain, near the origin of these nerves.

But a palsy of the stomach frequently arises from a flaccidity of its muscular fibres. In gluttons, the fibres of this viscus is often so over-stretched, as at last to lose their strength, and the action of it languishes ever after. For these muscular fibres streighten both the orifices of the stomach, lest the food should escape before it is digested: hence in a palsy of the stomach, the crude and indigested aliments slip over the pilorus, and irritate the intestines, whence gripes and a sudden discharge of the unconcocted aliments by stool. But if the rest of the viscera are sound, a *fames canina* sometimes happens. Rufych^a discovered this cause of a canine appetite and lientery, in the body of a woman, whose pilorus was so relaxed, that he could thrust his whole fingers into it.

A too plentiful and constant use of hot Water may produce a palsy, but the stomach first of all feels the effects of it; hence insuperable languors of the stomach in those who drink too freely of those hot watery liquors. But paralytic complaints of this kind, are not so dangerous, as those produced from internal causes, affecting the nerves themselves, or their origin.

The bladder has likewise strong muscular fibres decussating each other variously, by which it expels the urine. If these muscles become paralytic, and the sphincter still retains its force, a retention of urine follows; but if the sphincter is at the same

^a Obs. Medico Chyr. observ. 74. pag. 68.

time paralytic, the urine escapes involuntarily. Aretæus^a has remarked both these palsies of the bladder.

Muscles of the face, bad, &c.] Because the muscles of the face receive their nerves from the branches of the fifth pair, therefore the cause of this palsy may be lodged in the brain itself, and easily produce an apoplexy. In general, the higher the palsy is seated in the body, the more dangerous, as the cause of the disease is nearer the brain.

A paraplegia is very dangerous, &c.] A paraplegia is a cessation of the voluntary motions in all the parts below the neck. The cause of it, therefore, obstructs the very origin of the medulla spinalis; hence, if it is increased, it may produce an apoplexy, all the actions depending upon the medulla spinalis, being thereby abolished. See Aph. 818.

An hemiplegia is bad.] A paraplegia has often happened, without any fault existing in the brain, but there has never been an instance of an hemiplegia where the brain was not immediately affected; for the patient stammers, finds his memory impaired, &c. hence the cause of the disease increasing, a fatal apoplexy is to be feared. But when either of these palsies succeeds an apoplexy, there is more hope, because then we know the cause of the disease is lessened.

A palsy that is attended with, &c.] It was remarked before, that whatever renders a nerve incapable of transmitting the animal spirits, or hinders the arterial blood from flowing into a muscle, may occasion a palsy. If then there is a coldness in the paralytic part, it denotes that the circulation in the part is stoppt, and that the nerves likewise are obstructed, and consequently the disease more difficult to cure. But sometimes together with the motion,

^a Lib. i. cap. 7. pag. 34.

the sense of feeling is entirely lost in the paralytic part, which is a very bad sign, because the cause of the palsy not only obstructs the *motory*, but also the *sensitive* nerves.

But the worst sign of all is, when the paralytic parts waste, for that denotes a want of nutritious liquor, which ought to supply the parts affected. This kind of Atrophy commonly follows the *colica pictonum*.

That with a strong convulsion, &c.] It will appear hereafter at Aph. 1064, that a palsy is sometimes removed by a violent fever, and a convulsive trembling of the part affected; and likewise that the chief remedies, are such as excite motion, and increase the heat of the body. If therefore the obstructions which produce a palsy cannot be overcome by that powerful action, which exerts itself on the opposite side, it is plain that the cure must be difficult.

But from the contrary symptoms, &c.] Thus a palsy in the lower extremities, leaving the superior parts free, is more easily cured, than if it first attacked the lower parts, and afterwards ascended upwards.

And also what is so often, &c.] From a paralysis of the heart, without any antecedent symptom whatever.

A P H. MLXIII.

THE physician who applies what has been said from Aph. 1057, to Aph. 1063, to each of the muscles, whatever their functions are, will understand the causes of an infinite number of very wonderful diseases, and likewise know their diagnosis and prognosis.

As most of the functions are performed by muscular motion, it is apparent, that they may be disturbed, and entirely abolished by a palsy. An hemiplegia, in which one side of the body is deprived of voluntary muscular motion, destroys one half of the motions performed by the nerves subject to the command of the will. If a slighter cause obstructs some certain part of the encephalon, some functions in the body only will be disturbed, the others remaining intire as before. The same thing happens from an obstruction in the nerves, after they pass out of the medulla oblongata, and spinalis, through their whole course to the muscles. But although the nerves are sound, yet if the fabric of a muscle is destroyed, or remarkably changed, the functions will likewise be necessarily hurt. A practical example will illustrate this. If one considers the structure of the larynx, and the number of muscles which regulate the motion of the cartilages which compose it; if he considers besides, that to pronounce a single letter, the action of a great number of muscles is required, he will not be surpris'd, why all the functions are often restored, after the cure of an apoplexy, the speech alone frequently remaining impaired.

A P H. MLXIV.

NATURE has cured this disease by attenuating and dissipating the morbid matter, deposited by a bad crisis on the outside of the brain, its ventricles, the medulla oblongata, spinalis, the exit of the nerves from the medulla spinalis, and on the nerves themselves; by resolving the impacted matter by means of a violent fever supervening, moving it by a convulsive tremor of the part; and by carrying it off by a copious and long continued diarrhæa.

Physicians ought always to consider, with great attention, those salutary efforts of nature, by which the most obstinate diseases are sometimes cured, and to attempt to imitate by art those things which, happening spontaneously, they observe to be of service. It is very obvious, that the cure of a palsy may be hoped for, when the brain, the medulla oblongata, and spinalis, the nerves and muscular fibres remain sound, and the morbid cause has only hindered the free determination of the cause of muscular motion from the brain, through the nerves, to the muscles

——. Whatever can so attenuate the morbid matter, that it may be dissipated or evacuated; or after it is attenuated, may be so moved, as not to hinder the action of the encephalon and nerves, will likewise cure a palsy. I have sometimes seen lethargic and asthmatic people wonderfully relieved from a sudden swelling in their legs and feet. Whence it appears probable, that a palsy may be cured by a metastasis of the morbid matter only.

It was said, at Aph. 1017, that an apoplexy is cured by a strong fever; but then the cause of it must be from a pituitous inert disposition of the blood; for this kind of morbid matter may be resolved and expelled by a fever. Boerhaave had a patient who was thrice seized with a palsy, and as often cured by a violent fever.

A convulsive trembling of the paralytic part is a good sign, both as a cause, and as a symptom; for by those concussions, whatever is impacted in the muscles, the extremities of the arteries, and perhaps in the nerves, or, at least, in their coats, may frequently be resolved. Sometimes a kind of pricking sensation is felt in the paralytic part, which is also a good sign. Thus when one sits long inclined upon one hip, and compresses the great nervous trunk in the back part of the thigh, the leg becomes numb; but upon changing the situation of the body, and so re-
moving

moving the compression, a disagreeable sensation is felt, as if innumerable small needles were pricking the parts: soon after which, the sense of motion and feeling returns. It was observed before, that a copious and long continued diarrhæa is of service in the cure of an apoplexy, and consequently must be of great service in the cure of the palsy, by carrying off the morbid matter.

A P H. MLXV.

THE cure requires the removal of the cause, hindering the function of the nerves and arteries, and a restitution of the free motion of the fluids.

Every disease requires a removal of its cause, but this alone is not sufficient here; for a free course of the humours through the arteries and nerves to the muscles, must likewise be restored; which is frequently the most difficult part of the cure; for the soft and tender substance of the nerves is often destroyed by violent compressing causes, or they being long deprived of their fluids, collapse, and their sides growing together, are ever after impervious. For this reason, a palsy of several years standing, is hardly ever cured.

A P H. MLXVI.

THE cause, hindering the function of the nerves and arteries, is removed by various means, easily applied, when that is first known.

A P H. MLXVII.

IF that cause be internal, and arises from a thick stagnant matter, such remedies ought to be used, which produce all those effects, by which nature has frequently cured this disease. See Aph. 1064.

In the cure now to be described, we do not treat of the palsy arising from a retention of the menses, or hæmorrhoids, or from plethoric, or inflammatory tumours; but of a chronical palsy, arising from a gross stagnant matter. See Aph. 1030.

A P H. MLXVIII.

THEREFORE, the cure is to be attempted, 1. By attenuating and dissipating medicines; α. As by aromatic, cephalic, nervous, and uterine vegetables, as they are called, in the form of expressed juices, infusions, decoctions, extracts, spirits, and conserves. β. By fixed salts drawn from these by burning, or volatile salts by distillation, or putrefaction. γ. By oils obtained from these by expression, boiling, infusion, and distillation. δ. By saponaceous remedies obtained by art from a combination of these. ε. By the strong-scented parts of animals, the juices, spirits, oils, salts, and tinctures of insects. ζ. By fossil salts, metallic crystals, and medicines chiefly composed of these. η. By a judicious use of all these, so as that they may mutually assist each other; by these means an attenuation and dissipation of the morbid matter will

will be obtained, together with a febrile heat. 2. By strong stimulants, and such remedies as act powerfully upon the impacted matter, by raising a trembling and convulsive motion of the nerves ; such are strong sternutatories and vomits, especially, if they are frequently repeated. 3. By warm, resolvent, aromatic, and vegetable purges, or by those of the acrid fossile, metallic, mercurial and antimonial kind, and likewise by strong hydragogues, given in large doses, and frequently repeated, in order to excite a copious and lasting diarrhæa. 4. By first filling the vessels with a large quantity of the above attenuating drinks, and then by exciting greater motion, and plentiful sweats, by the vapour of spirit of wine set on fire.

A P H. MLXIX.

DRY, warm, external frictions, until the parts become red, either with penetrating and stimulating spirits, prepared from animals and vegetables, or with nervous oils, liniments, balsams, and ointments, are of service here. Vapour baths, and hot baths ; acrid, aromatic, and attrahent plasters ; cupping, scarifications, blisters, whipping, and such things as excite pain, and slight inflammation ; as nettles, and the like, are also beneficial.

A P H. MLXX.

BUT great care must be taken, that all the above remedies be applied to the seat of the cause, if possible : the part, or parts, hurt, (for many

many are affected) a knowledge of the muscles, and nerves, their union, origin, and distribution, and likewise of the functions depending upon these, if they are compared together, will clearly point out the latent seat of the disease.

As the cause of a palsy may be seated in different places, it is of the greatest use to distinguish well the part where the cause of the palsy is lodged. It is true indeed, that the seat of a palsy may be in the brain, but then there is no room for topical remedies; and those only are of service, which are mentioned in the cure of the apoplexy. But when all the senses, both internal and external, remain perfect; then topical remedies, as frictions, blisters, ointments, &c. ought to be applied to that part, where the nerves, distributed to the part affected, go out of the medulla spinalis. Thus if the lower extremities become paralytic, those applications ought to be made near the last vertebra of the loins. If the upper extremities are affected, the same remedies should be applied to the last vertebra of the neck. Anatomy directs us best in this case, and the tables of *Eustachius* delineate very exactly the origin of the nerves and their course; so that, by viewing these plates, one may easily find out the place where these topical remedies ought to be applied. *Trallian*^a gives some excellent diagnostic rules, by which the seat of a palsy may be known.

^a Lib. i. cap. 16.

Of the EPILEPSY.

A P H. MLXXI.

THE Epilepsy, a disease very different from the former, is said to be present, when a person suddenly falls down, losing all the senses, both external and internal, with a violent, involuntary, and reciprocal concussion of all the muscles, or some of them, with an alternate rest, and a returning paroxysm.

The diagnostic signs of an epilepsy, although it is attended with a great number of symptoms, are an abolition of all the senses, both internal and external, with a convulsion of the muscles, independent of the influence of the will. Thus it is distinguished from a palsy, in which there is a lax immobility of the muscles; from a catalepsy, in which the body retains the same posture which it had at the first attack of the disease: and also from the apoplexy; because in this, together with the cessation of the senses, and voluntary motion, there is the appearance of a profound sleep, without convulsions.

A P H. MLXXII.

THIS disease, so wonderful in its appearances, has been ascribed to the gods, dæmons, the divine wrath, incantations, and the like supernatural causes.

A P H.

A P H. MLXXIII.

FOR there is no gesture, inflexion, or posture of the body known, which it has not sometimes represented ; sometimes also it imitates all the motions of running, walking, turning round, bending forwards, lying down, standing upright, with a kind of stiffness in the body.

A P H. MLXXIV.

YET all these varieties consist only in changing the motions of the moveable parts, and consequently of the muscular ; therefore they only suppose various contractions of the muscles ; hence various influxes of the nervous fluid ; hence again a various expression of it from the *common sensory* into the nerves ; and lastly, various causes in the medulla of the brain producing these expressions, which will be best understood from an historical enumeration of them.

The comment to this aphorism is entirely founded on Boerhaave's Theory of the Nerves ; which, being altogether speculation, is here omitted. Those who have a mind to indulge their fancy, may consult his Institut. Med. Sect. 274, & seq.

A P H. MLXXV.

THESE are, 1. Hereditary, from a family taint of the father or mother, relations, or ancestors ; the disease frequently lying dormant in

in the father, while it is derived from the grand-father to the grand-child. 2. The causes may be born with one, from the imagination of the mother when pregnant, impressed at the sight of one in an epileptic fit. 3. The brain diseased in its membranes, surface, substance, and ventricles, by wounds, contusions, abscesses, pus, sanies, ichor, blood, acrid, fetid lymph, boney excressences on the inside the cranium, depressions of it, a cartilaginous disposition of the venous sinuses, fragments or splinters of bones, or of instruments hurting the meninges, or the brain, and quicksilver any way conveyed to the brain. The brain hurt, by inflammation, corruption, and erosion of the meninges, by a caries of the bone, by black bile, and venereal gummata. But all these causes are increased by whatever determines an afflux of the fluids towards the brain, as a plethora, violent exercise, heat, drunkenness, gluttony, venery, quickness of parts, profound meditation, violent passions, a strong imagination, fear, and particularly a sudden fright. 4. All violent affections of the nerves, as great as periodic pain, the hysteric passion, erosions and irritations from worms, teething, an acrid humour; milk coagulated in the stomachs of infants; meconium, the contagion of the small-pox, a cardialgia, ulcerous matter lurking in any part of the body, hunger, a surfeit, acrid food or drink, medicines or poisons. 5. A suppression of some habitual evacuation, as of sanies, pus, the menstrua, lochia, the piles, and urine. 6. Some fumes;

fumes, which renew the paroxysm, or a fomes lodged in some particular part, whence it ascends to the brain with the perception of a blast.

1. That diseases are propagated from parents to their offspring, appears from numerous observations. Nor has this been observed in the epilepsy only; for the phthisis and gout are likewise transmitted from one generation to another, even to the latest posterity. But what is most surprising here, is, that sometimes this morbid fomes lies dormant for many years in the body, before it becomes active. Examples of this kind are often to be found in Historians. See *Pliny*, lib. vii. cap. 12.

2. Observations teach us, that the imagination of the pregnant mother has produced surprising changes in the fœtus, and that a fright of the mother has rendered the new born infant epileptic. A case of this kind we have in *Hildanus*^a. But I own, that I do not understand why a fright should not rather produce epileptic fits in the mother, than in the fœtus.

3. As the brain itself is affected during the time of the epileptic paroxysm, it is no wonder that injuries done to the brain, its meninges, &c. should likewise produce the epilepsy. Humours gradually accumulated, may cause this disease, by compressing the substance of the brain by their bulk, or affecting it by their acrimony, as appears from numerous observations.

Boney excrescences on, &c.] It was observed in the comment to Aph. 549, that sometimes such boney tumours arise from latent causes, and if these happen in the inside of the cranium, the brain will

^a Observ. lent. 3. Obs. viii.

be compressed, and if this excreffence happens to protuberate in a point, it easily appears what complaints must thence be produced.

Depressions, &c.] See Aph. 267.

A cartilaginous disposition of, &c.] The *venous sinuses* are a kind of receptacles, in which the blood may be collected, and retained, at least for some moments. If these are hardened into a cartilage, they become inflexible, and cannot yield to the distending blood. Besides their substance grows thicker, and their cavity is lessened; whereby the ready return of the venal blood from the brain is hindered. It appears from *Bonetus*^a, that an epilepsy has followed, when the return of the venal blood from the head has been stopt or hindered.

Fragments or splinters, &c.] Of these we treated in wounds of the head.

Quick-silver, &c.] Persons who were never subject to the epilepsy, have been seized with one from an imprudent use of quick-silver.

The brain hurt by inflammation, &c.] For an inflammation is capable of producing the same effects as those which arise from extraneous bodies hurting the brain. It was moreover observed, in the history of the phrensy, that convulsions usually follow the worst kind of phrensy; and that in those who had died of this disease, there were not only inflammations found within the cranium, but likewise abscesses, mortifications, and corroding liquors, each of which was sufficient to produce an epilepsy before death. If good pus, collected under the cranium after a violent contusion, is capable of producing a very strong epilepsy, as *La Motte* tells us, putrid sanies, which is much more acrid, must produce still more violent effects.

^a Sepulch. Anat. Lib. i. 283, 292.

A P H. MLXXVI.

ALL these causes of the epilepsy (Aph. 1075.) we learn from practical observations, and the dissection of dead bodies.

A P H. MLXXVII.

THE effects of this disease may be reduced ;
 1. To disorders of the brain, hurt by such violent and repeated convulsions ; whence a failing of the memory, dulness, foolishness, the palsy, apoplexy, and death. 2. To disorders of the nerves and muscles ; whence contractions, distortions, and deformities of these, and of the joints. 3. To violent spasms ; whence an inflammation, mortification, and blackness of the parts which abound in blood, especially of those seated above the muscles. 4. To some secretions violently produced during the paroxysm ; as of meat, drink, lymph, bile, froth, mucus, and saliva discharged upwards ; green stools, semen, and urine downwards ; and blood both ways.

A P H. MLXXVIII.

HENCE is understood what an hereditary epilepsy is, and why it is never curable. What an idiopathic, and why this kind is seldom curable. What a symptomatic, and why frequently cured.

An hereditary epilepsy has justly been reckoned incurable by all physicians, as the knowledge of the cause contributes much to the success of the cure. But who can distinguish or remove that morbid impression derived from the parent to his offspring?

An idiopathic epilepsy is very hard to cure, as the cure depends upon discovering the exciting cause which renews the paroxysm. But the cause being lodged in the encephalon, and in that part of it where the origin of the senses and voluntary motions is placed, it can hardly be discovered, except by its effects. For this reason *Hippocrates* pronounces those epileptic patients difficult to cure, "in whom the disease affords no sign from what part of the body it derives its origin."

A symptomatic epilepsy is that in which the encephalon is not originally affected, but drawn, as it were, into consent, by some other part before affected. It was observed, at Aph. 1075, that strong irritations of the nerves, even in the most distant parts of the body, may produce an epilepsy; and that when those irritating causes are removed, the disease ceases. It was likewise there remarked, that a suppression of some habitual evacuation, as of pus, sanies, the menstrua, &c. have often been the cause of this disease. The cicuta aquatica, and many other poisons, while they remain in the stomach of a strong person, are capable of producing the most violent epilepsy; but slighter causes are sufficient to occasion it in those, whose nervous system is more easily irritated, as in infants, hysteric women, &c.

A symptomatic epilepsy is often cured, because in several parts of the body, in which the fomes of the disease is lodged, the noxious matter may be drawn off by blisters, cauteries, &c. or the nerves may be destroyed, which is frequently done with very good success.

A P H. MLXXIX.

AND it likewise appears, that very different remedies, and different methods of cure, are required in this disease, according to the known variety of the cause, the peccant matter, and of the part, to which the application of the remedy, and by which the evacuation of the matter, ought to be made.

The epilepsy more frequently happens in childhood; yet in this state it arises from very different causes. Thus milk coagulated by an acid in the *primæ viæ*, often occasions an epileptic fit in tender infants: in this case medicines which correct this acidity, and quickly expel it out of the body, are the best anti-epileptics. But it would be useless to give these, when the gum swelled, painful, and inflamed, is irritated by the cutting of a tooth; in which case an incision made by a lancet, is the only remedy. Other remedies again are required, when the epilepsy arises from the variolous contagion, as will afterwards appear when we treat of that disease.

But the peccant matter is often not only of a different quality, but likewise lodged in different parts of the body. In a violent contusion of the head, extravasated blood compressing the encephalon, has sometimes produced the epilepsy. In this case, it is cured by removing the extravasated blood, by means of the trepan. But if a venereal tophus, eroding the boney substance of the cranium, oozes forth an acrid sanies, although an outlet is made for the matter; yet the epilepsy will not thereby be cured, because the same sanies continues daily to drip out, and therefore may renew the disease afresh; on which account a different cure is required. When it arises from poisons remaining in the stomach, it is evident, that another

other method of cure is requisite, by which the poison may be either expelled, or so corrected as not to hurt any more.

The part to which the remedy ought to be applied, must likewise be considered. For if the epileptic fit always arises from a particular place, as when a kind of cold vapour is perceived to ascend from the foot towards the head, a proper topical remedy ought to be applied to this part, or the nerve destroyed, by the irritation of which, the whole common sensory is disturbed.—When it arises from a suppression of humours usually excreted, the best remedy is, to promote their return. When ulcers in the heads of children are rashly cured by drying ointments, an epilepsy almost always follows. In this case it is effectually cured, by applying to the shaved head a melilot plaster mixed with an eighth part of the blistering plaster; by which, in a few hours, an acrid ichor will be discharged, and the epilepsy relieved.—If it arises from a suppression of the menses, lochia, &c. these evacuations ought to be promoted by proper remedies; for these discharges are not so easily supplied by other evacuations, as is commonly believed. Bleeding indeed lessens the quantity of the blood, but nevertheless the uterine vessels still remain too full, and this fulness produces the worst diseases; which are hardly to be cured, unless the retained blood makes its way through the usual passages. Two ounces of blood, voided by the anus, affords more relief in the piles, than a pound taken from the arm by the lancet. In a true ischuria, hydragogue purges, and strong sudorifics have been given to evacuate what was retained, but always with a fatal event, unless the free secretion and excretion of the urine were restored.

A P H. MLXXX.

THE epilepsy arising from the first and second cause, Aph. 1075, consisting in a bad conformation of the solids, hardly admits of a radical cure; but the causes renewing the paroxysm, as they are constantly growing afresh, may be safely removed: whence these, which are infinite in number, and only to be known by observation, ought to be carefully investigated, and then cured according to their nature.

The causes of an epilepsy are two; the one predisponent, the other exciting; which joined to the former, constitutes the proximate or immediate cause of the disease. But the exciting or occasional causes, do not make the disease, but when the predisponent cause is present.

But a radical cure, which destroys the predisponent cause, is hardly ever to be expected; for when it arises from an hereditary taint concealed in the body for several years, and when the person is grown up, and the body strong, it easily appears, that there can be but small hopes of removing this latent morbid quality, impressed by the parents upon the stamina of their offspring. The same is true of that morbid impression made upon the fœtus from a fright of the mother, which is hardly to be removed ever after; and we learn from observation, that epilepsies from this cause, are absolutely incurable.

The only hope of a cure consists in producing a great change in the body; but it has not been determined what ought to be changed in the epileptic person, in order to restore health. *Hippocrates*^a had observed, that about the time of puberty, an epi-

^a Aph. vii. Sect. 5.

lepsy sometimes ceased; and recommends a change of climate, and manner of living for the cure of this disease^a: and the same has been confirmed by modern observations.

But it appears, from medical observations, that other diseases coming on, and changing the body very much, have cured the epilepsy. *Hippocrates* remarks, "that those who are seized with a quartan, do not suffer the great disease, i. e. the epilepsy, and that a quartan, coming after the epilepsy, cures it:" this observation is confirmed by daily experience. An epilepsy, which returned every week, was cured by a quartan, and the patient lived healthy afterwards, although the fever was removed by the peruvian bark. A boy ten years old, who had been three years epileptic, the paroxysm returning several times a day, was seized with an epidemic fever, attended with several dangerous symptoms, of which he at last recovered, and continued afterwards free from the epilepsy. *Miscellan. Curios. An.* 3. p. 34. *An.* 7 and 8. p. 298.

Physicians, from these and such like examples, have endeavoured to destroy the immediate cause of the epilepsy, by raising violent commotions in the body by powerful remedies, not always with a view of expelling the morbid matter, but that by such commotions the present latent disposition, which nourishes the disease, might perhaps be changed. *Trallian*^b, when the disease was of long standing, and obstinate, had recourse to white hellebore, and *Ægineta*^c commends the like remedies. Modern physicians have used mercurial and antimonial remedies with the same view, but these ought to be given with great caution; especially to weakly persons.

Others indeed use milder medicines to produce the same effect. In Asia, they give large doses of musk; and Hoffman has adopted this practice. The che-

^a Aph. xlv. Sect. 2. cap. 13. pag. 29. versa.

^b Lib. i. cap. 15. pag. 75.

^c Lib. iii.

mists have searched for such a remedy in metals, which should not act by evacuating, but by changing insensibly. I have seen a medicine prepared from copper, which occasions no kind of loathing, but a strange creeping sensation over the whole body, even to the fingers ends : this I have known to be of service to some people. *Arctæus* gave copper, but with an intention to expel what was noxious by vomit or stool^a.

However, it frequently happens, that the immediate cause of the epilepsy cannot be removed. In this case, all that can be done is, to prevent, or remove, the occasional causes, which renew the paroxysms. It is true indeed, that these causes are almost infinite in number, and frequently differ in different patients, and therefore require the most accurate observation.

A. P. H. MLXXXI.

AN epilepsy arising from the third cause, Aph. 1075, is known from other symptoms, denoting the brain likewise to be hurt, as pain; a heaviness, a fulness, a wound in the head, a vertigo, universal trembling, sparks of the eyes, and an inability to move them, a circumgiration of the head, or of the whole body. The true cause of this epilepsy is hardly to be removed, because the particular one is not easily to be distinguished : but revellents, discutients, preparatives, and depurants, are of service ; hence bleeding, purging, vomiting, burning, issues, fistulas, epispastics, wounds of the head, trepanning, anti-hysterics, and opiates, are useful : out of which, what choice we are to make, a discovery of the proximate cause of the disease, will teach.

^a Lib. i. de Curat. Morb. acut. cap. v. pag. 84.

As every cause which hurts the brain, may be increased by whatever determines a greater afflux of fluids towards the head, all those remedies are of general use, which divert the impulse and quantity of the humours from the head, disperse the liquids obstructed in the cranium, and relax and open the passages, through which nature has sometimes expelled them: and these are bleeding, &c.

Bleeding.] In many epileptic patients a plethora precedes the paroxysm; for the vessels of the head appear distended, and the eyes red. In this case, bleeding, as it lessens the fulness of the vessels, will be of service. Bonetus^a gives us some histories of epilepsies that were cured by bleeding.

Purging, vomiting.] See what has been said of these in the comment to Aph. 1026. When the epilepsy arises from a viscid, inert, cold cause, the more acrid and warm purges are used; but when it arises from an inflammatory disposition of the blood, such purges as were directed for the cure of inflammations, will then be proper. The ancients placed great hopes in purging remedies for the cure of the epilepsy, as appears from *Hippocrates*^b; and it is evident, that they are remarkably useful, when the cause of it is lodged in the head.

Burning, issues, &c.] For all these divert the impulse and quantity of the blood from the head to other parts, and evacuate noxious humours, that would otherwise be retained, or determined towards the head. Thus in infants, the skin of the head sometimes discharges a very fetid inchor, and then they are in good health: but if this discharge is imprudently checked, they become epileptic, neither can they be cured, until a return of the discharge is procured. *Aretæus*^c ordered epispastics to the head, and advised burning it with a hot iron, if other applications had no effect. *Celsus*^d likewise advises this

^a Sepulch. Anatom. tom. i. pag. 286. ^b De Morb. Sacro.
^c Lib. i. pag. 121. ^d Lib. iii. cap. 23.

and scarifications to the back parts of the head as the last remedies. *Schenckius*^a has several observations which seem to confirm this practice.—Fistulous ulcers breaking out spontaneously, issues, and sea-tons, by evacuating the noxious humours, may produce the like effect.

Wounds of the head.] In wounds many vessels, especially in large ones, are cut; therefore the same effect may be expected from them as from arteriotomy. *Marcellus Donatus*^b gives the history of a case which confirms this. A French nobleman troubled with the epilepsy, took a journey into Italy, in order to consult the most skilful physicians there; but being plundered by robbers upon the road, and very much wounded, he was left for dead. Among other wounds he received a large one on the forehead, which carried off a great part of the bone. After a long time he was cured of this wound, and freed from the epilepsy, which used to return every month. Instances of the like kind are to be found in other medical writers.

Trepanning.] For by this operation extravasated humours lodged under the cranium are removed. *Aretæus*^c recommends this operation for the cure of an obstinate epilepsy.

Anti-histerics and opiates.] These are useful, not by removing, or lessening the material cause of the disease, but by quieting strong affections of the mind, they compose sudden commotions of the nervous system, which rouse the permanent causes into action.

Out of which, what choice, &c.] These different remedies have been enumerated, but it plainly appears, that they are not suited to every case, and that the particular causes ought first to be found out. Thus, in a violent contusion, extravasated humours may lodge under the cranium, or fragments of the

^a Lib. i. pag. 117.^b Lib. ii. cap. 4.^c Ib.

bone prick the membranes, or substance of the brain itself, in this case, trepanning is the best remedy.— In a cold pituitous state of the humours, and when lymph is gradually collected in the ventricles of the brain, blisters, searons, issues, &c. will have a very good effect.— If the bones of the cranium become carious from the venereal disease, that disorder must first be cured; and so of the rest.

A P H. MLXXXII.

AN epilepsy arising from the fourth case, Aph. 1075, must be variously treated, according to the variety of its proximate causes; hence anodynes, paregorics, and narcotics; anti-hysterics; anthelmintics; correctors of acrimony; a seasonable incision of the gums; the removing, or correcting of ulcerous matter, then become anti-epileptics.

The epilepsy arising from the causes enumerated at No. 4. are lodged without the cranium, are very numerous, and consequently various remedies must be required against such various causes, as,

Anodynes, paregorics, &c.] By anodynes the common sensory is rendered incapable of pain, although the cause which produces it, still remains.— When therefore the epilepsy proceeds from this cause, a great deal of good may be done by easing the pain. See Aph. 226, 229.

Anti-hysterics.] These are useful, where the nervous system is too delicate, and apt to be disturbed from the slightest causes. *Trallian*^a affirms, that he has cured several epileptic patients by wild rue.

Correctors of acrimony.] When the epilepsy arises from acrimony, as in infants; but when it arises from other causes, they are hardly of any use.

^a Lib. i. cap. 15. pag. 80.

A seasonable incision of the gums.] For the pain arising from the slow laceration of the gums in protruding the tooth, is by incision removed. But with what cautions this ought to be done, will be said afterwards in the diseases of children.]

The removing or correcting, &c.] While the sanies remains within, there is no hope of a cure. If the venereal poison infects the bones of the cranium, an epilepsy frequently follows; here quicksilver prudently administered, is the best anti-epileptic remedy.

A P H. MLXXXIII.

THE cure of the epilepsy arising from the fifth cause Aph. 1075, is effected, by resolving the obstructed matter, relaxing the passages, and expelling it out of the body: hence blisters, caustics, issues, and fistulæ; medicines which promote the lochia, menses, and piles; together with diuretics, are so frequently of service in this kind of epilepsy.

The cure here depends wholly upon restoring the suppressed evacuations. But an obstruction of these evacuations may be occasioned, either because the matter to be excreted is not moveable and thin enough to pass off; or because the vessels through which it is to pass are not sufficiently pervious; or lastly, because the force moving the matter through the vessels is by much too inactive. But it is apparent that each of these causes may exist separately, may be combined, or united altogether. This will perhaps be more evident from an example. Thus, an epilepsy is sometimes produced from a suppression of the menses, the indication then is to restore the menses. Sometimes these are suppressed from a cold, viscid cacochymy of the blood,

blood, the force of the arteries is weakened, and the matter to be excreted is not moveable enough. But if by the use of chalybeats, frictions, exercise, and a drying diet, the action of the vessels is increased, the cold viscid lentor will be resolved, and the suppressed menses return, viz. from the matter being rendered moveable, and the moving force restored.

But sometimes, the blood is good, the vis vitæ sufficient, and yet the menstrua are suppressed, or deficient, because the extremities of the vessels, opening into the cavity of the uterus, too much resist their dilatation. In this case, the passages ought to be relaxed by baths, steams, &c.—Sometimes, in plethoric girls, the blood is good, and the vessels pervious, but so distended, that they cannot act upon the contained fluids; at the same time the expelling force of the heart is weakened, because it cannot empty itself into the over distended vessels. But as soon as the quantity of blood is diminished by bleeding, the usual force of the heart and arteries is restored, and the menstrua return, even at the time the blood is flowing from the vein. Hence it appears, what great judgment is required, to adapt the general indications of cure to each of these cases.

A P H. MLXXXIV.

BUT that epilepsy which arises from the sixth cause, Aph. 1075, must be cured, by strengthening the too great weakness and irritability of the nervous system, which is best done, by the exercise of walking, playing, riding on horseback, or in a chaise; by the use of aromatics; by chalybeats, and corroborating medicines; by making an artificial, deep, and long continued ulceration in the part where the fomes is lodged, either by incision, caustics, or blisters;

blisters; and afterwards keeping it open by digestives, mixed with corrosives; and lastly, by ligatures compressing the affected nerve.

This species of epilepsy, in which the paroxysms are renewed, by something derived from another part of the body, and ascending to the brain in the manner of a blast, is cured by strengthening the nervous system, and by preventing the affected part from injuring the brain. Strong exercise, and corroborants are here the best remedies. Chalybeat waters, and the mistletoe of the oak, as they are possessed of strengthening qualities, are often used with success.

But corroborants are of no use, when this irritation of the nerve is so powerful, as to disturb the whole brain. In this case, physicians have attempted, by a strong ligature, to hinder the ascent of this blast, or creeping sensation, by which the paroxysm is frequently prevented. *Galen*^a mentions this effect of a ligature in a boy, who felt the disease arise from his leg. In *Asia* they burn the part where the sensation is felt with moxa; perhaps a blister might have the same effect, if it was kept long running to discharge the acrid humours, which irritate the nerve or tendon, and produce such violent effects.—Sometimes a cure has been made, by cutting the part quite to the bone, or searing sufficiently deep with a red hot iron. But the cure here cannot be ascribed to a discharge of noxious humours, but rather to the intire destruction of the nerve, the irritation of which renewed the paroxysm. A remarkable case of this kind, is related in the *Edinburgh Medical Essays*^b.

In the time of the paroxysm, care should be taken that the patient do not hurt his head, or other parts. A bit of cork, or soft wood, to which a string must

^a De Locis Affect. lib. iii. cap. 11.

^b Tom. iv. p. 416.

be fastened to prevent its falling into the throat, should be put between the anterior grinders, to prevent the patient from biting his tongue.—The convulsed limbs are to be gently extended, and softly stroked with the hand.—Neither are strong volatile spirits to be held to the nose. But when the patient recovers from the fit, it is then proper to give such remedies as raise the languid spirits, as all the aromatic waters of the shops, adding to these tincture of amber, sp^a. fal. ammoniac, or other stimulants of the same kind, the use of which should be continued, till the patient recovers his usual alacrity.

A P H. MLXXXV.

HENCE appears the vanity of all specifics, and methods of cure, which empty boasters extol against this disease.

Whoever considers the variety of the causes enumerated, will easily be convinced, that an universal specific remedy, capable of subduing all and each of these causes, is hardly to be expected.

A P H. MLXXXVI.

AND it appears also, that the proximate cause of every true epilepsy is always too great an action of the brain upon the nerves of motion, and none upon those of sensation.

It is demonstrated in physiology*, that the first origin of all the senses and motions is lodged in the encephalon, but in what parts, has not yet been shewn. However, practical observations teach, that the origin of the senses is distinct in us from that of

* Instit. Med. sect. 284.

240 Of the EPILEPSY. Aph. 1087, &c.
motion. For, in the history of a palsy, it appeared,
that sometimes the motion of a part was abolished,
while the sensation remained unhurt, and that sensa-
tion was lost, while the motion remained; hence it
is probable they have different origins in the *common*
sensory.

A P H. MLXXXVII.

AND that the causes which produce the
reciprocal paroxysms, are very numerous
and various.

This appears from Aph. 1075, wherein all these
causes are enumerated.

A P H. MLXXXVIII.

LASTLY, the origin, nature, effects, and
cure of particular spasms, of the opistho-
tonus, emprosthotonus, and universal tetanus,
easily appear, as they are only different kinds
of epileptic fits.

If we consider what was said of the origin and na-
ture of the epilepsy at Aph. 1074; as also what was
observed concerning the effects of it at Aph. 1077,
it will evidently appear, that all these may be ap-
plied to spasms of particular parts, as to the opistho-
tonus, emprosthotonus, and tetanus; and it will
likewise appear, that the same method of cure is
required, as they only differ from the epilepsy in
this, that the action of the senses remain unhurt, or
at least, not intirely abolished.

Of

Of MELANCHOLY MADNESS.

A P H. MLXXXIX.

THAT disease, in which the patient lies long and obstinately delirious, without a fever, and always intent upon one and the same thought, is by physicians called *melancholy*.

Melancholy madness differs from a febrile delirium, in that it appears without a fever, and continues with obstinacy for many months, and even years: whereas a delirium with a fever, terminates much sooner, either in health, or death.—It is distinguished from a mania, as it is not attended with that furious rage observed in maniacal patients. Besides, melancholy people have their thoughts continually fixed upon one and the same object, while in all the rest of their actions they shew a sound judgment, and often a sharp wit.

A P H. MXC.

THIS disease arises from that malignant disposition of the blood and humours, which the ancients have termed *atrabilis*; and on the other hand, when the same disease springs originally from an affection of the mind, it soon generates a like *atrabilis* in the most healthy body.

We learn from physiology*, that man is composed of two distinct parts, united one to the other; namely,

* Institut. Med. sec. 27.

the mind, and the body, which, however different in their nature, are yet so linked together, that certain thoughts of the mind are ever united with determinate changes, or conditions of the body. And although we cannot explain this mutual union, and why the one should suffer from the other, yet we are not the less certain, that this is matter of fact. *Sanctorius* observes, that a free perspiration renders the mind cheerful, and that when it is obstructed, it becomes cloudy and sorrowful.

A P H. MXCI.

IT will be therefore necessary to draw a lively picture of this wonderful disease, the history of which, has been thought so obscure, that antiquity has been unjustly blamed for it.

As many of the moderns have denied the existence of atrabilis, either in the time of health or disease, it will therefore be of service to examine here, what the ancients meant by the term atrabilis, and how far they have spoken truly of it.

Hippocrates^a says, "that the human body contains blood, phlegm, and two kinds of bile; the yellow, and the black. The two former make up the substance of the body itself, and the latter qualify it as to health and disease. But the body is most healthy when these four are duly tempered, both as to quality and quantity.—For the body is diseased when any of these is redundant, or deficient, &c." *Galen*^b says the same, but more at large. From these words it appears, that the ancient physicians did not account the atrabilis a morbid humour. For although the blood appeared an uniform liquor, yet when let out of the veins, it separated into distinct parts. Hence they believed,

^a De natura hominis.^b De atra bile.

that the yellowness of the serum arose from yellow bile, its clamminess from phlegm,—its redness from parts properly called blood,—and its blackness from atrabilis. In explaining the use of the parts, they taught, that the liver was the organ of sanguification.—Besides, they observed, that in certain diseases a black matter was discharged, either by vomit or stool, which often relieved the patient, and from hence they were positive, that the atrabiliary humour existed in the body, and being deposited upon the viscera, produced diseases. But when it was discovered that the liver was not the organ of sanguification, nor the spleen the depository of atrabiliary filth, physicians began to doubt, whether, even in diseases, there was ever any such thing as atrabilis. It could not be denied, but that such a filth was sometimes discharged; but then it was believed to be concremented blood, corrupted and turned black by stagnation. *Simson** was of this opinion, and affirms, “that the parched atrabilis of the ancients, was “nothing more than concremented blood;” yet he candidly confesses, that in the body of a man who died from abdominal obstructions, he found “the spleen “of a round figure, and very black colour,—that “upon cutting into it, there immediately followed “a very black and tar-like matter, without the least “appearance of pus.” In another body he found “a great quantity of black-coloured bile in the gall “bladder, so thick, that it could hardly be pressed “out through the open cystic duct.” Does it not hence appear, that a black filth is collected in the abdominal viscera, very different from concremented blood? And may not such matter be properly termed *atrabilis*, as it is generally collected in the liver, or in the viscera which furnish the matter of the bile? Nor is it difficult to conceive, how this black bile should be discharged by vomit, or by stool. For

* Dissertat. 4to. De re medic. pag. 153. & seq.

certainly, the atrabilis put into motion, may flow through the ſplenic vein into the liver, or by the *porus hepaticus* into the duodenum, from which it may regurgitate into the ſtomach, and be expelled by vomit, or by ſtool. See Aph. 1004. But if it be too viſcid, and cannot flow through the narrow extremities of the *vena porta*, or if the liver, already charged with the like matter, intercepts its paſſage, then the *vena ſplenica* will be diſtended, and a nauſea and vomiting will enſue, ſo that by theſe efforts the ſplenic branches will be dilated, and a way made for the matter to paſs through the *vaſa brevia* into the cavity of the ſtomach. Do not we ſee the bile in the gall-bladder, (when its courſe through the *ductus communis* into the duodenum is blocked up by a ſtone) thus repelled through the liver itſelf into the cava, and tinge the whole body with an icteritious colour?

The ancients therefore are not to be accuſed of introducing an imaginary cauſe of diſeaſes, when they ſpeak of atrabilis collected in the abdominal viſcera, for by this they meant no more than a very clammy viſcid matter, or dregs of blood, thickened by ſtagnation, or a ſlow motion.—We are next to inquire how the atrabilis can be formed in the blood, and from what cauſes.

A P H. MXCII.

IF, in the whole maſs of blood, the more moveable or fluid parts are diſſipated, the more immoveable will then be united and cohere one to the other; the blood will become thick, black, pinguid, and earthy. To blood thus conditioned, we give the name or an *atrabilary* humour, or a *melancholic* juice.

It appears from chemical experiments, that the moſt fluid parts of the blood conſiſt chiefly of water;—that the ſalts, oils, and earthy parts are of a more fixed nature, and that theſe are, in a healthy ſtate, diluted by this thin fluid. When therefore, from any cauſe the blood becomes thick, and of a dark colour, there ariſes that cacochymy, which is called *atrabilary* or *melancholic*.

A P H. MXCIII.

THE cauſe of which *atrabilary humour*, may be every thing that expels the fluid parts of the blood, and fixes the reſt; ſuch as an intenſe application of the mind upon one and the ſame object; want of ſleep; great commotions of the mind, whether of joy or ſorrow; great and laborious exerciſe, too long continued, eſpecially in a hot and dry air; immoderate venery; auſtere, hard, dry, and earthy aliments, taken a long time without any exerciſe; drinks of the like kind; to theſe may be added, meats of the animal kind dried in ſmoke, in the air, or in ſalt, eſpecially if they are old or tough; unripe fruits, and mealy unfermented ſubſtances; aſtringent, coagulating, fixing, and cooling medicines, ſlow poisons, and the like; fevers attended with heat, which continue long, return often, and go off without ſalutary criſes, and without the uſe of proper diluents.

There is no part of this aphoriſm that has not been already explained in various parts of this work, for which reaſon, the commentary to it, is here omitted.

A P H. MXCIV.

NOW when this *atrabilary* tenacity, arising from the causes enumerated in the preceding aphorism, equally infects the whole mass of the circulating humours, it will produce some disorders, which immediately become obvious to the sight; these are generally the following, the external and internal colour of the skin is first pale, then yellowish, dark brown, livid, and at last black, with spots of the like kind; the pulse becomes slow; the patient cold, and the respiration weak; the circulation through the blood-vessels is free, but not so through their lateral branches; hence a slower, lesser, and thicker separation of all the secretory and excretory humours; a lesser waste and dissipation of them; the appetite is impaired, and the patient becomes lean, sorrowful, and fond of solitude; every passion of the mind becomes lasting and violent; in all other matters he is indifferent, or unconcerned; averse to exercise; yet, at the same time shews a very great constancy and perseverance in any sort of study or labour.

There are three degrees of melancholy, the first, upon which we here treat, is when the whole mass of the circulating fluids is depraved with the *atrabilary* cacochymy.—The second, when the *atrabilary* matter is deposited upon the abdominal viscera, and there rests.—The third, when the same matter, long impacted in the viscera, is by any cause put into motion, and again mixed with the circulating fluids. Upon each of these degrees of melancholy, we shall treat

Aph. 1095, &c. Of Melancholy Madness. 247
treat separately. In this aphorism are enumerated those signs which denote that the disease is already present, such are, the external colour of the body, slow pulse, &c. all which demonstrate, that the blood has now acquired a greater degree of tenacity, and moves with less celerity through the vessels.

A P H. MXCV.

THE atrabiliary viscid has therefore, for its *matter* the thick oil and earth of the blood, united and compacted together; which, the more it is deprived of the fluid, mild, and diluting particles, and the more it is thickened, and the longer it has continued in this state, the more mischievous its effects, and the more difficult the cure.

A P H. MXCVI.

HENCE the diagnosis and prognosis of this disease are apparent (and will yet be more so from what follows.) Hence, also, the method of cure is evident.

A P H. MXCVII.

AS soon as the first symptoms of melancholy appear, the patient's mind is to be amused with a continual change of objects, without knowing their intent; but such objects are to be chosen, as usually excite passions contrary to those that prevail in the patient. Sleep is to be procured, by diluting, demulcent, paretic, and narcotic medicines, and by keeping the pa-

tient quiet; he fhould live in a warm moift air; his aliments fhould be light, thin, and approaching to the nature of our healthy humours, recent, bland, and laxative by their gentle faponeous quality, in the ufe of which he muft perfift for a long time. The medicines here proper, are diluents, correctors of acrimony, and refolvers of the oil and earth of the blood, with fuch as relax the veffels, and by a gentle ftimulus carry off the humours: and thefe are the juices of ripe fruits, preparations of honey, pot-herbs, and broths made with them; mineral waters; the beft drink is ptifan sweetened with honey, ftictly avoiding fuch aliments as produce the difeafe. See Aph. 1093.

The patient's mind, &c.] For this purpofe travelling excels all other methods; for thus a perpetual variety of objects is prefented to the mind. For this reafon, phyficians often advife mineral waters to be drank at the fpring head, efpecially fuch as lie confiderably diftant from the patient. At the fame time, it is of great fervice to excite paffions contrary to thofe predominant in the patient. Thus the timorous are to be encouraged by hopes,—the peevifh are to be humoured,—the melancholic comforted, and the indignant to be kept in fear; but fee Aph. 1113.

Sleep is to be procured.] For nothing hurts melancholic patients more than want of fleep, and too much watching may occafion the diforder, as was obferved at Aph. 1093.

He fhould live in a warm, &c.] For a warm moift air affords a watery and thin vehicle to the thickened fluids, by means of the bibulous veins that open all over the furface of the body. For this reafon,

reason, the spring time is the most favourable for curing this, and all other chronic diseases.

His aliments should be, &c.] Because by these the blood is thinned, and the atrabiliary matter resolved. But as the disease is of the chronic kind, these means must be continued a long time.

A P H. MXCVIII.

BUT if the atrabiliary matter, from the causes enumerated at Aph. 1093, is rendered more dense, viscid, and immoveable, it is then of course drove into the hypochondriac vessels: for this we are taught from the nature of the humour, the seat and disposition of these vessels, and the known laws of hydraulics. In these it will gradually stop, be accumulated, and stagnate, and then the disease is called the *bip*, or *hypochondriac passion*, in which the spleen, stomach, pancreas, omentum, and mesentery, are affected.

We have hitherto considered the atrabiliary matter as equally dispersed through the circulating humours; but if its quantity be increased, it may stick in divers parts of the body, and produce the worst kind of obstructions. However, it most frequently of all is deposited upon the abdominal viscera, wherein the motion of the blood is extremely slow, as is demonstrated in physiology^a. As soon, therefore, as the atrabiliary matter falls upon these parts, the disorder is called the *bip*, or *hypochondriac affection*. This is the second degree of melancholy, which is easily distinguished from the former, being attended with other symptoms; and *Ægineta*^b too, has judiciously

^a Boerh. Institut. Med. sect. 224, 308, 350.
cap. 14. pag. 30.

^b Lib. iii.

250 Of Melancholy Madnefs. Aph. 1099.
made this diftinction. We fhall now confider the
fymptoms which ufually accompany this fecond de-
gree of melancholy.

A P H. MXCIX.

IT produces in the abdominal viscera a conti-
nual fenfe of heavinefs, anguifh, and fulnefs,
efpecially after eating and drinking; the respi-
ration becomes difficult from the weight of the
abdominal viscera; the cyftic and hepatic bile,
the juices of the ftomach, inteflines, and me-
fentery, become defective, and act with lefs
efficacy in changing the aliments; hence the
firft digeftion is every way vitiated; vegetable
food is converted into a crude acid, and animal
food into a putrid alcali, or into an oily rancidi-
ty; whence cructations, flatulencies, fpafms,
coftivenefs, and indurated fæces; a jaundice of
a worfe kind than that at Aph. 1094, and all
the fymptoms there enumerated much more vi-
olent.

When the abdominal viscera are ftuffed with the
atrabiliary matter, the functions of thefe parts muft
be difturbed, and new fymptoms arife, which, at the
fame time, denote the ftate of the difeafe. The firft
of thefe is a fenfe of weight about the præcordia,
which never intirely goes off, like the fpafmodic con-
vulfion in the hypochondriac paffion. The fecond
is a moft troublefome anguifh, which afflicts the pa-
tient more than pain itfelf, and often conftains the
diftacted patients to lay violent hands upon them-
felves.—Besides, it appears from the whole hiftory
of chylickation^a, that to change the crude aliments,

^a Inftitut. Med. fec. 224.

there

there is required a due quantity of good bile, and other juices, from the stomach, pancreas, &c. and therefore when these humours are vitiated, the first digestion will be greatly injured, and the aliments degenerate into various kinds of acrimony; those of the vegetable kind will be converted into a crude acid, and those of the animal kind into a putrid alcali, or into an oily rancidity: hence flatul, spasms in the stomach and intestines, costiveness, indurated fæces, &c.

But as all the symptoms of the atrabiliary cacochymy enumerated at Aph. 1094, are now increased in this second degree of the disease, the reason appears, why a jaundice is of more dangerous consequence now; but see what has been said of the jaundice at Aph. 918.

A P H. MC.

WHEN the disease comes to this state, the cure must be attempted, otherwise it will soon shew its evil disposition, and therefore ought to be prevented, if possible. If the disease continues, it becomes incurable, and frequently mortal, as will appear from what follows. If the cure is attempted by purging medicines, the healthy and more moveable humours are carried off, and the viscid and morbid humours unite more closely, whence the disease grows still worse.—If by strong stimulating and resolving medicines, the suddenly resolved matter often becomes acrimonious, and rushing impetuously into the tender vessels of the liver, destroys them, from whence numerous and incurable disorders.

A P H. MCI.

THEREFORE the atrabiliary matter is,
 1. To be rendered gradually moveable, taking care to find out the predominant acrimony, and then giving saponaceous medicines possessed of an acrimony opposite to that which prevails in the humours. The patient must persist in the use of these, until the weakness and inequality of the pulse, a nausea, tenesmus, an anxiety, and a febricula, shew that the matter is put into motion: and then, 2. The matter is to be immediately carried off by gentle purges, by clysters of the like kind, by drinking of whey, and mineral waters.

A P H. MCII.

BUT if the atrabiliary matter now fixed, and compacted, remains long in the abdominal viscera, it acquires an acrimonious and corrosive quality, by stagnation, the motion of the viscera, and the circumambient heat; new matter is continually accumulated, because an obstruction is already formed, and the same causes continue to operate; hence the matter increased in quantity, and grown acrimonious in quality, by its continual motion, extends, erodes, and destroys the vessels. From the same causes, the spleen, stomach, pancreas, omentum, mesentery, the intestines, and liver, suffer a like destruction of their fabric; and therefore all the evils enumerated at Aph. 1099, will be greatly increased, but chiefly disturb the several functions

Aph. 1102. Of Melancholy Madnefs. 253

functions of the parts, especially thofe of the brain, from putrid vapours continually received into the veins. And now it is that the difeafe is called by its true name, *atrabilis*.

We have hitherto confidered the atrabiliary matter as equally infecting the whole mafs of blood, or deposited in the abdominal viscera, and as yet, without any confiderable degree of acrimony, or fo confined by the viscid and tenacious matter, as to be incapable of doing any great hurt, unlefs it be fet free by a fudden refolution and motion of the matter. But when it acquires a more corrupt ftate, by ftagnation, and the internal heat of the body, it by degrees corrodes the veffels and viscera in which it is lodged; hence all the actions of the chylopoietic organs will not only be difordered, but almoft intirely destroyed, and all the complaints enumerated at Aph. 1099, increafed.

But atrabilis collected in the body occasions a change of the thoughts, and produces grief, a love of folitude, with violent and ungovernable paffions of the mind, as was remarked at Aph. 1094; all which evils are increafed when the atrabiliary matter is impacted in the abdominal viscera.—If thefe effects are produced from the fame matter lodged in the abdominal viscera, it is not at all to be wondered that an augmentation of the fame matter fhould difturb all the functions of the brain.—When, therefore, the difeafe comes to fuch a height, as to excite wonderful imaginations in the mind, ravings, and other perturbations of the brain, it is then called atrabilis, or melancholy madnefs.

A P H.

A P H. MCIII.

WHEN it is known by the ſigns given at Aph. 1093, 1094, 1099, and 1102, that the atrabiliary matter has produced this degree of melancholy, it requires the greateſt judgment and ſkill, to thin, move, and carry it off, on account of the difficulties mentioned at Aph. 1100, which are here ſtill greater, becauſe the matter, now come to its greateſt degree of acrimony, is eaſily put into motion, but afterwards hardly to be reſtrained. For theſe reaſons the whole diet ſhould be contrary to the known acrimony of the humours deſcribed at Aph. 1051, gently reſolving, ſtimulating, ſuch as will keep the body open, and after digeſtion leave few faeces. —The drink ſhould be ptiſan ſweetened with honey, the juices of ripe fruits, or the whey of milk. —The exerciſe ſhould be gentle, but continual; the heat very temperate; and the ſleep much; baths, fomentations, clyſters, and drinks, compoſed of ſuch remedies as have no acrimony, which by their diluting, reſolving, abſterging qualities, attenuate the atrabiliary matter, and afterwards carry it off ſlowly, by thoſe outlets which nature points out, having always a regard to the particular acrimony which prevails.

It readily appears that this greater degree of melancholy is more difficult to cure, and requires likewiſe the greateſt judgment to conduct it. For the matter here is both tenacious and acrid, impacted in veſſels that are both very tender, and over diſtended. —If you diſſolve the tenacity, —the acrimony will be ſet free, which then does more miſchief. But as the abdominal viſcera ſend all their venal blood to the liver, there is great reaſon to fear that the diſſolved
matter

Aph. 1104. Of Melancholy Madness. 255

matter will be thrown upon the liver, and destroy the fabric of that important viscus, as will be shewn under the following aphorism.

As to diet, whatever sort of aliments be chosen, those are to be preferred which are easy to digest, and leave but few gross fæces. For this reason whey is preferable to milk, and broths to flesh-meats. Considerable benefit may be expected from the softer pot-herbs, as endive, spinach, mallows, &c. especially if they are boiled in broth, and afterwards taken from it by straining; for from such thin nourishment few fæces are left, and at the same time the body will be kept open by their gentle laxative virtues.—The ancient physicians greatly esteemed the use of ptisans, sweetened with honey, for the cure of acute as well as chronical distempers. Whey enriched with the resolving virtues of grass in the spring season, affords a very proper drink for daily use; and most agreeable drinks may be also prepared from cherries, strawberries, &c. bruised in water, when an acid acrimony does not prevail.

A P H. MCIV.

BUT if the atrabiliary matter has acquired an high degree of acrimony, and the viscera are already considerably corrupted, while the productive causes enumerated at Aph. 1102, still continue, if, under these circumstances it be put into motion, by exercise, the heat of the sun, or of fire; by acrid aliments, and too plentiful living; by acrid, and very stimulating medicines, which effervesce with the matter of the disease; by poisons which hurt by a similar operation; or lastly, by some violent diseases, then the matter now rendered more acrid, moveable, and active, breaks through and destroys

stroy the vessels, and at length changes them with the *atrabilis* itself, into putrid vomicas, and now the *atrabilis* is said to be *turgid*. When it comes to this degree of malignity, if it be dissolved in its vessels, and moved towards the liver, it is carried into the heart through the eroded branches of the vena cava, and soon produces the most terrible disorders: for if it participates of a coagulating acid, it creates poly-pous concretions in the heart, lungs, the aorta, and carotid arteries, with all their ill consequences, and at last death itself.—If it reaches to the brain, it produces an apoplexy, palsy, catalepsy, epilepsy, a delirium, and a madness of the worst kind, generally incurable. In the arterial system it changes all the humours, and occasions raving fevers, which in a short time putrify all the parts.—But if the matter participates of a putrifying alkali, wherever it fixes, it produces gangrenes that quickly become fatal. Hence an infinite number of diseases throughout the whole body, and in every part of it, which are not to be cured, but by destroying the atrabiliary fomes.—If again the small vessels of the viscera be ruptured, and the matter falls into the cavity of the peritonæum, there presently follows an insuperable, and very great weakness, a putrefaction and increase of the acrid matter; and then a gangrenous erosion of all the abdominal viscera, whence wonderful phenomena, a tympany: death, with an intolerable stinking of the corpse.—But if the matter moved be carried into the liver, and from thence makes its way through the biliary vessels

Aph. 1105, &c. Of Melancholy Madneſs. 257

veſſels into the gall-bladder, the ductus hepaticus, the ductus communis, and to the inteſtines, it then produces a nauſea, vomiting, an atrabiliary dyſentery, with intolerable anxiety, ſtruggles, pain, and eroſions of the bowels; from whence follow inflammations, ulcerations, and putrefactions of the inteſtines, ſtomach, œſophagus, fauces, and mouth; hence again ariſe violent convulſions, and at length a pretty eaſy death by a gangrene deſtroying all ſenſation in the parts.

A P H. MCV.

BUT the atrabiliary matter thus moved, and rendered active, has, together with a tar-like tenacity, a moſt ſharp acid acrimony, which corrodes metals, and ferments earths, or elſe an alkaline ſaline acrimony, highly corroſive, or a putrid oily acrimony, which is the worſt of all. But from what cauſes each of theſe acrimonies ariſe, by what ſigns they are known, and by what means they are cured, has been already ſufficiently demonſtrated from Aph. 58 to 107, and Aph. 1051, 1052.

A P H. MCVI.

AND it readily appears to one who duly conſiders what was formerly ſaid at Aph. 1000, 1003, 1004, and likewise the ſituation, ſtructure, and courſe of the circulation in the viſcera in which this malignant humour lodges itſelf, that the atrabilis when it becomes *turgent*, is a diſeaſe that admits of no cure: but that

258 Of Melancholy Madness. Aph. 1107.
the principal remedies are diluents and opium,
with acrids opposite to that which predomi-
nates.

The truth of this aphorism is apparent from what has been before advanced; for the disease is said to be *turgid*, when the atrabilis, that has been long impacted in the abdominal viscera, grows more acrimonious and worse conditioned, and by a spontaneous corruption, or improper method of cure, is dissolved and put into motion, so as to destroy the vessels in which it is lodged.—In this state, there is hardly any hope of a cure, as the atrabiliary matter erodes the viscera. But here diluents mixed with acids, if the atrabilis be putrid, or with the milder absorbents, if it be of the acid kind, are the only remedies. To these opium may be added, in order to quiet those enormous disturbances, which the atrabilis may have raised in the body.

A P H. MCVII.

FROM what has been said, the nature of the hypochondriac passion, and of melancholy as described at Aph. 1089, is easily understood; for it appears, that by long continued grief, the obstructed vessels of the abdominal viscera produce a stagnation, change, and accumulation of the atrabilis, which gradually increases, although the body was but a little before very healthy: and that the same atrabilis arising from corporeal causes produces the delirium mentioned at Aph. 1089.

A P H. MCVIII.

THE evident causes of melancholy are, 1. All things that either fix, exhaust, or disturb the nervous fluid of the brain: such as great and sudden frights, intense application of the mind to any one object, violent love, watchings, solitude, fear, and hysterical affections. 2. All causes which hinder or disturb the formation, preparation, circulation, and various secretions and excretions of the blood, especially in the spleen, stomach, omentum, pancreas, mesentery, intestines, liver, womb, and hæmorrhoidal vessels; and therefore the hypochondriac passion, acute diseases ill-cured, and especially a phrensy and ardent fevers, profuse secretions and excretions of all kinds, aliments and drinks that are cold, earthy, viscid, tart and astringent, sultry heats long endured and roasting the blood, a stagnant, marshy, and cloudy air. 3. A natural disposition of the body, such as a black, hairy, dry, lean, and robust; a middle-age, a quick, penetrating and discerning judgment.

A P H. MCIX.

IF this melancholy continues long, it produces foolishness, an epilepsy, apoplexy, madness, convulsions, blindness, wonderful imaginations, laughter, crying, singing, sighing, eructations, flatulencies, anxieties, profuse discharges of urine, sometimes clear as water, at other times very thick; a retention, accumulation, and often a sudden excretion of gross blood in the abdomi-

260 Of Melancholy Madnefs. Aph. 1110,
nal viscera; an obstinate costiveness, thin and
frequent spittings, and a *power of living* with-
out sleep, aliments, or fire, beyond credibility.

Thin and frequent spittings.] This more especi-
ally happens when the free circulation of the blood
is impeded through the abdominal viscera, stuffed
with atrabiliary matter, whereby the secretion of the
intestinal lymph, the pancreatic, and gastric juice is
obstructed: and as the salival glands secrete the same
kind of liquor, there will be, during the obstruction
of the former, a greater separation of the saliva, and
consequently a frequent spitting. For this reason,
melancholic people are called, *spitters*. But this
spitting is bad, both as a cause, and as a sign; since
it denotes that the abdominal viscera are obstructed,
and the thinner parts of the blood carried off by the
profuse spitting, which must therefore increase the
disease.

Without sleep, &c.] If this was not confirmed
by certain observation, it would appear incredible.
I have known some who have lived without sleep for
several weeks together, and others who have obsti-
nately refused all kinds of nourishment for six weeks,
drinking nothing but a little water at intervals, and
have even lain naked upon a stone pavement in the
severe winter of 1740.

A P H. MCX.

A Cure has often been obtained by a scabby
eruption, which sometimes resembles an
elephantiasis; by numerous and large varices;
by a discharge of blood from the hæmorrhoidal
veins greatly swelled; and of the atrabilis by
vomit and stool.

A P H. MCXI.

Melancholic patients are usually hurt by every method of cure that weakens the powers of the body;—that evacuate roughly; and by such remedies as put the fluids into violent motion, whether they be given as cordials, or under any other denomination.

Many physicians have been of opinion that repeated bleeding must be serviceable to draw off the bad blood; and so long as the atrabiliary matter continues moveable in the circulation, there is some reason for the practice of this method: but when it is impacted in the abdominal viscera, blood-letting must be improper, because it cannot take out any of the atrabiliary viscid, but only lessen the quantity of the blood, which such juiceless and exhausted bodies are hardly ever able to bear. Besides the loss of blood hinders the due assimilation of the aliments, as was observed at Aph. 25. No. 1.

A P H. MCXII.

THEREFORE, the best method of curing this disease is, carefully to consider the proximate causes, the difference of constitutions, and then to give remedies opposite to these causes, and various constitutions.

These causes were enumerated at Aph. 1093, and reduced under three classes at Aph. 1108, the better to assist the physician's memory.—These must be removed, or, at least, weakened.—Thus, if the disease arises from bad diet, a better must be directed;—if from some obstinate affection of the

mind, all things are to be avoided which renew the remembrance of it.—If it arises from a particular acrimony joined with the atrabiliary viscid, that acrimony must be corrected.—But the principal curatory indications are enumerated in the four following aphorisms.

A P H. MCXIII.

THE first indication will be therefore to excite, increase, and regulate the fluid of the brain and nerves; which is done, 1. by diverting the mind from its accustomed object, to others of a contrary kind. 2. By artfully introducing passions of the mind contrary to that of the melancholy. 3. By indulging their false imaginations; or, 4. by frequently opposing them with great resolution.

A P H. MCXIV.

SECONDLY, by opening, relaxing, incising, and stimulating the obstructions, whether they be the cause, or the effect of the depraved imagination, by the use of mineral waters, hydromel, hepatic, and anti-hypochondriac decoctions, waters impregnated with lixivial, or compound salts, mild mercurial purges, vomits, motion, exercise, riding, sailing, emmenagogues, and such as promote the *lochia*, and the hæmorrhoidal flux, by baths, liniments, and plasters.

A P H. MCXV.

THIRDLY, by alleviating the symptoms, by bleeding, cold-bathing, carminatives, and opiates.

A P H.

A P H. MCXVI.

FOURTHLY, by giving such remedies as are known from experience to exhilarate the mind, and strengthen all the parts of the body, the above evacuations being first premised.

A P H. MCXVII.

FROM what has been said at Aph. 1110, to 1117, it appears that the cure of this disease consists in curing the atrabilis, and that from hence we are to derive not only the present malady, but likewise an infinite number of diseases falsely accounted incurable.

Of a M A N I A.

A P H. MCXVIII.

IF the melancholy increases so far, as to bring on so great an agitation of the fluid of the brain, as to throw the patient into a raging fury, the disorder is then called a *mania*, or raving madness.

The violent ragings that attend a *mania*, plainly distinguish it from melancholy, in which, the patients are indeed, cross, fullen, and morose, but not furious.—It is likewise distinguished from a phrensy, which is always accompanied with an acute continual fever, whereas, a *mania* is without any fever.

A P H. MCXIX.

A Mania differs only in degree from the sorrowful kind of melancholy that is produced from it, arises from the same causes, and is generally cured by the same remedies.

A P H. MCXX.

IN which there is commonly an immense degree of muscular strength, incredible wakefulness, a wonderful sufferance of hunger and cold, and dreadful imaginations,

A P H. MCXXI.

BUT it is to be remarked, that anatomical dissections shew, that the brain of maniacal persons is hard, dry, and friable, with a yellowishness in its cortical substance; but the vessels turgid, varicose, and distended with black and viscid blood.

All this appears evident from cases collected by Bonetus * in his sepulchret. Anatom.

A P H. MCXXII.

IT is likewise to be remarked, that in a mania, all the excretions of the body are almost suspended.

As a mania is preceded by a melancholy,—and as the secretions and excretions diminish in proportion

* Sepulch. Anat. Lib. i. pag. 205.

to the quantity of the accumulated atrabiliary viscid, the reason is plain, why in maniacal patients, all the excretions are either wholly suppressed, or greatly deficient.

A P H. MCXXIII.

HERE the chief remedy is, to throw the patient into the sea, and keep him under water as long as he can possibly bear.

A P H. MCXXIV.

WHEN all remedies have been tried in vain, it has sometimes happened, that varices, the hæmorrhoids, a dysentery, dropfy, a profuse and spontaneous hæmorrhage, tertian and quartan fevers have cured this disease.

Varices, the hæmorrhoids.] As these are so beneficial in the cure of melancholy, they must be equally so in the cure of a mania, which is only a higher degree of melancholy. For thus the atrabiliary filth is drained from the abdominal viscera, and at the same time, both the impetus and quantity of the blood derived from the head. *Schenckius* ^a gives us the case of a copper-smith, who was cured of a mania by varices breaking out in the legs.

Dysentery.] If the atrabiliary matter be gradually resolved, and without much acrimony, the dysentery, however troublesome, is yet salutary, as the matter of the disease is partly evacuated, and the humours derived from the head; if otherwise the dysentery must be speedily fatal. See Aph. 1104.

Dropfy.] *Hippocrates* ^b says, that a dropfy coming after a mania, is a good sign. But to under-

^a Lib. i. pag. 142.^b Aph. sec. 7. Aph. 5.

stand this, it is to be remarked, that a mania sometimes arises from a dissolved state of the humours, which therefore, escape through the vessels, and fall either into the cavities of the body, or are collected in the cellular membrane.—Such a colliquation of the humours will also resolve the atribiliary viscid, and carry it out of the body, or translate it to some other part, to the relief of the patient. Moreover, we are taught by practical observations, that a mania has been cured by salivation: for *Wepfer*^a cured a peasant of a raving-madness by repeated doses of turbith mineral, until a spitting was raised. Therefore, a like colliquation of the humours from any other cause, may likewise sometimes cure a mania.

[A profuse and spontaneous hæmorrhage.] The hæmorrhage here meant is that from the nose, which is also so beneficial in the cure of a phrensy; for branches of the internal carotid are distributed thro' the internal parts of the nose, by which the blood vessels of the encephalon itself may be unloaded. But, at the same time, it appears, that this hæmorrhage will be chiefly serviceable in that kind of mania we shall presently describe at Aph. 1127.

[Tertian and quartan fevers.] In the history of intermitting fevers, it was demonstrated that the febrile matter was resolved in the obstructed viscera by the violent concussions which happen in the cold fit, and from the increased impetus of the circulation in the hot fit; and therefore, there is reason to hope that the atrabiliary matter may be resolved and expelled by the same causes.

A P H. MCXXV.

THIS kind of mania sometimes arises after violent and obstinate autumnal intermit-
tents, when the body has been exhausted and

^a De morb. Capit. pag. 323, &c.

weakened,

weakened, as well by the disease, as by repeated venesections, and purgings; and by these very means the mania is usually brought on again.

We have hitherto treated chiefly of the mania which follows a long continued melancholy; but there are still other kinds of manias that are often difficult to cure, and in which there are no signs of visceral obstructions, the common sensory only being disturbed from some latent cause. Such a kind of mania was observed by *Sydenham* after lingering tertian, and quartan agues, in which the humours degenerate into the very worst cacochymy, and give rise to numerous chronical disorders. If therefore the blood rendered viscid and acrid, stops in the vessels of the encephalon, it is evident enough, that the common sensory may be so disturbed as to produce a mania.

A P H. MCXXVI.

THIS kind of mania is cured only by a long continued use of restoratives, cardiacs, and roborants. If the cure is attempted by evacuations, it brings on an atrophy, weakness, and an incurable foolishness.

As it is usual to begin the cure of other kinds of manias with evacuations, *Sydenham* assures us, that, in this case, there is nothing more injurious; for, although they remove the ravings, yet they bring on an incurable foolishness; and he even further observes, that a clyster of sugared milk will cause a relapse when the patient is almost recovered. Medicines here proper are directed in our author's *Materia Medica*, under the present aphorism.

A P H. MCXXVII.

BUT the mania arising in robust persons, in the flower of their age, in those who are plethoric, and of a hot constitution, is cured by the same means, with which, that kind of epilepsy, described at Aph. 1081, is cured, that is, by repeated bleedings, and strong purging; and when the mania is moderated, by the use of opiates, and cardiacs.

The chief indications in the cure of a mania from these causes are, to empty the over distended vessels by bleeding,—to divert the quantity and impetus of the blood from the head, by strong purges, pediluvia, blisters, &c. and if the ravings continue after all these means have been used, then the violence of the disease may be safely quieted by opiates.

Of the CANINE MADNESS.

A P H. MCXXVIII.

THERE is yet another disorder, which, both from the madness, and terrible consequences that frequently attend it, ought to be treated of in this place, that is, amongst chronic diseases.

A P H. MCXXIX.

THIS disease is called *rabies*, or madness; and as it generally arises from the bite of a dog, it is called canine madness, and likewise, from

Aph. 1130, &c. Of the Canine Madnefs. 269
from one of its moft terrible fymptoms, a dread
of water, an *hydrophobia*.

A P H. MCXXX.

IT almoft always arifes from a poifon communicated to the body by the bites of mad animals; yet it appears, both from hiftory and obfervation, to have arifen fpontaneoufly in fome acute difeafes.

Schenckius ^a has collected feveral cafes of the hydrophobia arifing in other diforders, and there is one related in the Medical Effays from an inflammation of the ftomach, which was cured by bold and repeated bleedings ^b.

A P H. MCXXXI.

BUT almoft all kinds of animals may be affected with this diforder, and communicate the infection to other animals, and even to men.

Observations evince, that one mad dog will infect others of the fame kind, and even men, by their bites; and thofe bitten by one dog, may afterwards communicate the contagion to other animals.

A P H. MCXXXII.

IN particular, dogs, cats, wolves, foxes, horfes, affes, mules, fwine, apes, cocks of the poultry breed, and men, have propagated this infection to others, after being themfelves feized with this madnefs.

^a Obferv. Med. pag. 852.

^b Vol. i. pag. 283.

270 Of the Canine Madness. Aph. 1133, &c.

Baccius saw a gardener wounded in the hand by the beak of an old cock: on the same day he grew raving mad, and expired on the third. De venen. & antid. A woman endeavouring to part two cocks fighting, received a wound in the arm from the beak of one of them: she afterwards soon fell into an hydrophobia, and died in a short time. But in neither of these cases is there any mention, that these cocks were before bitten by any mad animal. May it not be here asked, whether the extreme fierceness of this animal, is not concerned as a cause? But in England, where fighting cocks are bred for the fight, it is very very rare to meet with a mad cock. May not this disease arise in these animals, without any previous infection from others? These observations seem to favour this opinion.

A P H. MCXXXIII.

YET this disease happens to no animals so frequently as to dogs, wolves, and foxes; and in these it chiefly arises from internal causes, without any previous infection.

A P H. MCXXXIV.

A Very hot climate; one exposed to sultry heats, and colds; a very hot and dry season; feeding upon putrid, stinking, and maggoty flesh; want of water; worms bred in the kidneys, intestines, brain, or in the cavities of the nose, are, the preceding causes of madness in these animals.

A P H.

A P H. MCXXXV.

THE signs of an approaching canine madnefs, by which we are warned of the danger, are chiefly the following; they become sad, chufe to be alone, and hide themselves; they do not bark, yet make a murmuring noife, and refuse all kinds of meat and drink; they are enraged and fly at ftrangers, but remember and revere their mafters; they hang down their ears and tails, and feem to fleep as they go along. Thefe are the fymptoms of the firft ftage of the diftemper; if they bite now, it is indeed dangerous, but not near fo deftructive as afterwards. Now they begin to pant, to hang out their tongue, to foam at the mouth, and keep it wide open; they walk flowly, as if they were half afleep, and then of a fudden they fet a running, but not always ftraight forward: after this, they no longer know their own mafter; their eye-lids hang down, the eyes water, and appear dufty; the tongue is of a lead-colour; they fuddenly become lean, grow mad, and at length quite furious. Thefe are the fymptoms of the fecond ftage, in which the animal can hardly continue 30 hours. A bite at this time is almoft incurable; but the more furious the animal is, the longer the difeafe has continued, and the nearer the animal is to death, fo much the more acute and fatal the bite is, and the fymptoms it occafions the more violent; &c contra.

Thefe are the figns both of an approaching and confirmed canine madnefs, to which Dr. James has

added

added another, namely, that all other dogs fly from one that is mad by a kind of natural instinct, and discover apparent signs of fear.

It sometimes happens that a dog suspected to be mad, is killed before it can be well determined whether he really was mad, or not : but the following experiment will remove this difficulty. Take a piece of boiled meat, and rub it about the teeth and gums of the dead dog, and offer it to another that is living ; if he refuses the meat offered to him, with a barking and howling, the dead dog was mad, otherwise he will devour it greedily.

A P H. MCXXXVI.

BUT there is hardly any kind of poison so contagious as this ; for it infects even by the slightest bite or scratch, through the cloaths, without fetching blood ; by the breath drawn into the lungs ; by touching the flesh, or dried flaver, or even applying it to the lips or tongue ; by kissing the mad animal ; by handling the wound, or the instrument by which the animal had been killed ; by eating the milk or flesh of a mad animal ; and lastly, by frequently touching and handling any thing infected with the canine poison.

It is certain, that some poisons may be swallowed without any hurt, which yet getting into the blood by a wound, are most certain death ; and it is moreover evident, that the flesh of animals killed by poisonous wounds, may be safely eaten by mankind. But we are assured from experience, that the eating of animals bitten by a mad dog, will propagate the madnefs.

By

By the breath drawn into the lungs.] There is a remarkable case in *Palmarius*,^a of a peasant, who having the canine madness, and knowing that he must soon expire, requested of those who kept him in chains, that he might have the pleasure of kissing his children before he died, which was granted, and soon after expired; but then all the children perished, within seven days, of the same disease.

By touching the flesh, or, &c.] Some eminent physicians have doubted whether a mere contact of the saliva be sufficient to spread the disease, while the skin remains intire; but that the slaver should be able to propagate the distemper after it has lain a long time dried, seems to be more incredible: yet there are cases related which seem to confirm it. *Cal. Aurelianus*^b gives one, and *Hildanus*^c another.

By kissing, &c.] The fatal effects of an hydrophobous father kissing his children, we have already seen from *Palmarius*, therefore the same effects may be justly feared from kissing a mad animal. In *Schenckius*,^d we have an instance of this, in a nobleman, who kissed his mad dog before he sent it to be stifled; but was afterwards seized with the hydrophobia, and perished.

By handling the wound, or the, &c.] That the poison of a mad dog may adhere to garments without losing its malignity, we have already seen; but we have in *Schenckius*^e the case of a lad, who unfortunately cut his finger in cleaning a rusty sword, which had been some years before used in killing a mad dog, by which accident he died hydrophobous.

By eating the milk, or the flesh, &c.] Although the saliva seems to be more infected in this distemper than any other of the humours, yet there is just reason to suspect that the venomous infection also ad-

^a De Morb. Contagios. pag. 266.

^b Acut. Morb. pag. 219.

^c Observ. Chirurg. pag. 62.

^d Observat. Med. pag. 848.

^e Ib. pag. 32.

heres to other parts of the body. *Sauvage* was of opinion, that the faliva only, and not the other humours, could spread the infection: yet we are told by *Fernelius* * of some hunters who dressed the flesh of a mad wolf, and that all those who eat of it were afterwards seized with madnefs. And *Palmarius* saw horses, oxen, and other cattle, who had eaten the straw in which some mad swine had lain, seized with madnefs, and at length perish. But to this M. *Sauvages* very justly replies, that the wolf's flesh might have been tainted with his faliva, and that the straw in which the mad swine lay, was infected with their flaver. But there could be nothing of this in the case of a dog who went mad, by licking the blood taken from the vein of an hydrophobous patient. It is true, the liver of the mad dog has been recommended as an antidote, but it does not appear that it ever did any good, as we shall shew at Aph. 1147. •

A P H. MCXXXVII.

A GAIN, there is hardly any poison known, whose malignity is so terrible, or that can produce such changes in the human body, and yet, when it begins to shew itself, rages so violently and speedily, and at the same time, may lie long concealed before it can be discovered. For some people are immediately seized with the symptoms of this disease, others, as it is said, not till twenty years after, and others again in all the intermediate spaces of so long an interval: but this diversity depends upon the heat of the season, the different stages of the disease in the infected animal Aph. 1135,

* De Morb. Contag. pag. 509.

and the constitution of the patient; or upon the different diet and medicines that have been used; for those of a bilious temperament are more readily infected, than those of a phlegmatic and dropical.

There is something surprising in the poison of this disease, which will lie dormant for a long time, without shewing itself by any apparent signs; and yet, when it becomes active, raises a most acute disease, which commonly kills before the fourth day. *Galen* observed this, and adds, that he had seen one patient seized with the hydrophobia, a whole year after he had been bitten: and *Schmed* saw a woman who had been bitten twenty years before by a mad dog, and never felt any uneasiness all that time, but was afterwards seized with a malignant fever, became hydrophobous, and died on the eighth day. But as an hydrophobia sometimes arises spontaneously in acute fevers, Aph. 1130, it may be reasonably doubted, whether this symptom ought not to be ascribed to the contagion which had lain so long in the body without any ill effect.

But although we are not certain how long the infection may lie latent in the body, we are, at least, sure of this, that it may remain there a considerable time, and that it is very difficult to expel, if it be not done at first. The celebrated *Cocchi* assures us, that persons bitten by a mad dog, were seized with the small-pox, and although they were cured of that disease, they afterwards died of the hydrophobia. But as the hydrophobia comes at different times, in different patients, even when the bite was given by the same dog, it seems worth our while to enquire into the causes of the quicker or slower effects of this poison.

Upon the heat of the season, &c.] It was remarked at Aph. 1134, that a dry and hot season

often produces madness in dogs; it is therefore probable, that very warm weather may excite the latent poison into action. It has been often observed, that people who have been bitten in the autumn, or in the winter, have perceived no manner of disorder from the wound, yet have, in the spring following, fallen into the hydrophobia. Thus, a man bit by a mad cat in the autumn, died of an hydrophobia the May following^a. Another bit in the middle of December, died of the same disease the spring following. From these, and many more cases of the same sort, it seems, that the vernal heat puts the canine poison into motion, although the acute fever which attends the small pox, has no such effect.

[Constitution of the patient, &c.] *Cocchi* has observed, that among several patients who were bitten at the same time, and by the same dog, some died hydrophobous, notwithstanding the most effectual method of cure had been used, and that others received no damage. A remarkable instance of this is related in the Philosophical Transactions, Abridgment, Vol. v. pag 366. which also confirms what we have already advanced, namely, that the canine poison may infect only by being handled, without any bite from the animal, and that it may produce different effects, in different constitutions.

A P H. MCXXXVIII.

A Man in perfect health, infected with this poison, is sooner or later seized with the following symptoms, generally in the order here enumerated. The part, into which the poison was first received, grows painful; then wandering pains spread through other parts, but chiefly through those nearest to the wound;

^a *Stalp. Vand. Wiel, Observ. Rarior. Cent. 1. Vol. i. pag. 400.*
a wea-

a weariness, heaviness, and slowness, in the whole muscular system; the sleep is restless, disturbed, and attended with frights, convulsions, and twitchings of the tendons; he is perpetually uneasy, sighs, appears dejected, and affects to be alone; in this manner, *the disease begins and finishes its first stage*; and blood taken from a vein has all the appearances of health. Afterwards all these symptoms are increased, and followed with a great oppression about the præcordia; a difficult and laborious respiration; a shivering; at last, his hairs stand on end, and he trembles all over at the sight of water, or other liquors, or of any object that is transparent, or reflects the light like a mirror; he loses his appetite entirely; yet he is able to swallow any thing that is solid; the touching of any kind of liquid, especially with the tongue or lips, causes an incredible anguish, tremors, violent convulsions, and ravings, almost to a degree of madness; he vomits a glutinous, brown, bilious matter, or a porraceous bile; he grows very hot, is feverish, always awake, and troubled with a priapism; his thoughts are greatly disturbed, confused, and unusual. In this manner does the canine madness advance, and here finish its second stage. After this, all the fore-mentioned symptoms grow continually worse, which are followed with a lolling of the tongue, that is now rough and dry; the mouth gapes; the voice is hoarse; the thirst insatiable, yet he grows raving mad, either at the sight of any liquor, or when he attempts to drink. Froth or flaver, is collected in the mouth, which

278 Of the Canine Madness. Aph. 1139.
he attempts to spit upon those about him, even against his inclination. He has likewise a desire of biting and snapping at every thing within his reach, even against his will, nor can he be withheld from those attempts, by the power of the will. He foams at the mouth, gnashes his teeth, and grins like a dog; the pulse and the respiration fail, and cold sweats ensue; he raves in the highest degree, and what is wonderful, the senses remain entire, and he is afraid lest he should hurt himself, or others. After this, almost always, within four days from the first stage of the disease, convulsions, with a violent difficulty of breathing, put an end to the patient's life.

A P H. MCXXXIX.

FROM this history of canine madness, the diagnosis is plain; but the prognosis is drawn from a consideration of the signs enumerated at Aph. 1135 to 1138, and likewise from the fatal events that have universally followed the bite of a mad dog; since the most eminent physicians in all ages, have lamented, that there has been found *no certain preservative against the canine poison, nor one single instance, sufficiently attested, of the cure of an hydrophobia.* But it is chiefly to be lamented, that after so many ages had deplored the insufficiency of every remedy that had been applied, they should yet have neglected the trial of others, different from the former.

The prognosis here is very doubtful, as we have no certain sign, by which we can tell whether the poison be expelled or not; or whether its violence be so far subdued, that for the future it can do no further mischief. For it appears from what was said at Aph. 1137, that this poison may lurk a long time within the body, and not shew itself by any manifest signs; yet may suddenly become active, and produce this calamitous distemper.

Diascorides indeed affirms that he had often prevented many from falling into the hydrophobia, and that he had known others saved from it by different physicians, but when they became hydrophobous, he knew not one that was cured. In the mean time, we ought not to deny, that some persons have escaped, after they have been seized with the hydrophobia.

A P H. MCXL.

THE dissection of bodies have taught us, that the organs of deglutition are usually inflamed,—that a various glue-like and bilious matter is collected in the stomach;—that the gall-bladder is full of black bile;—the pericardium dry;—the lungs surprisingly distended with blood;—the heart filled with blood that is often almost dry;—the arteries full, but the veins empty;—and the blood so very thin, as hardly to concrete when exposed to the air, whereas that taken from the veins three days before would form a hard cake;—all the muscles, viscera, the cerebrum and cerebellum, the medulla spinalis, more than usually dry.

These are the particulars that have been observed in dissecting the bodies of those who have died of

the hydrophobia; we shall now consider each of them in their order.

The organs of deglutition are, &c.] From the history of this disease, it appears that liquors can either be not at all swallowed, or else with extreme difficulty: yet it seems doubtful, whether we are to ascribe that symptom to an inflammation of these organs, or to the insuperable horror the patient has to all liquids. For when he begins to dread water, he makes no complaint of pain in the pharynx or fauces, but even swallows solid morsels without impediment, and even with a more pleasing alacrity than usual in health. A youth fourteen years old, who died of this distemper, eat very easily, though he was unable to swallow any kind of liquids. In inflammatory disorders of these parts, there is an inability to swallow any thing solid, although liquids frequently get into the stomach without much pain or difficulty. Therefore, this inflammation seems rather an effect, than a cause of the disease. But we read of hydrophobous bodies opened, in which there appeared no signs of inflammation, and *Mead* confesses, that he met with bodies that shewed nothing unnatural either in the head, breast, belly or fauces; but this was in a boy of nine years old, who expired on the second day of the distemper: but in a youth who was eighteen years old, and had a fever three days before his decease, the fauces were very much inflamed. Whence it is probable, that the fauces and organs of deglutition inflame in those who have a sharp fever some days before their death, otherwise not.

A glue-like, bilious matter in the stomach, &c.] This is confirmed by all the writers of observations. See, Boneti Sepulchret. Anatom. Lib. i. 342, &c.

The pericardium dry,] Although it is continually moistened by a very thin vapour distilling from a number of exhaling vessels, and usually contains after death a large quantity of a serous or watery humour.

The

The lungs surprisngly distended, &c.] Because the blood in this disease is deprived of diluent liquors, and of course becomes so thick, as to stop in the extremities of the pulmonary arteries; hence also that intolerable anguish and laborious respiration observable in hydrophobous patients.

The arteries full, but the veins empty, &c.] This was observable in a body where the blood appeared in no part concreted; nor would it harden when exposed to the cold air, although it readily coagulated some days before when taken from the arm by venesection. Hence it appears, that the signs of inflammation do not appear in every hydrophobous patient; but that in some there is a putrid colliquation of the humours. It may perhaps appear wonderful, that the same poison should produce opposite effects, both to inspissate and dissolve the texture of the blood. But the same thing is observable in putrid fevers, and in the small-pox. But where the humours are dissolved, the blood is not accumulated in the lungs, but easily passes on the left ventricle of the heart. But as the blood however dissolved, cannot be urged through the narrow extremities of the arteries without a considerable impulse from the heart and arterial coats, it will be accumulated in the arteries. For in all diseases, where the blood is dissolved, the pulse is very quick, weak, unequal, and intermitting, which shew, that the vital powers are oppressed. Yet the blood will not so readily stop in the branches of the pulmonary artery, because the whole force of the right ventricle of the heart is exerted in propelling the blood through that artery; and if the force is weakened, yet the frequent and short breathings in these diseases, continue the circulation through the lungs, which is much shorter than the other, through the aorta to the extremities of the whole body. For this reason, it is usual in such diseases for the extremities to be cold, while a great heat is perceived about the præcordia.

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All the muscles, viscera, &c.] This we learn from experience, and even in the body in which the blood was so greatly dissolved. Besides, all the secretions languish, while from the dread of liquors, none of that diluting vehicle is restored to the blood, which continually exhales from the body during life. Hence extreme dryness in all the vital and natural viscera, &c. Bonetus * gives a case of this kind in an hydrophobous patient.

A P H. MCXLI.

THE cure of this disease, if we except a few cases, has been hitherto very doubtful and uncertain, both in the prophylactic and the therapeutic part; the principal cause of which is a vain boasting of many specifics, and a neglect of that method of cure drawn from the history of the disease itself.

A P H. MCXLII.

SO far therefore, as we may conclude from this history of the disease, from comparing it with other diseases, and from the happy event of a few cases, it seems to be a disease of the *nerves*, and ought properly to be ranked with convulsions which invade the viscera and their vessels; hence there ensues a vitious state of the blood and humours, nearly resembling a gangrenous inflammation; but the principal seat of the distemper is in the stomach, and parts adjacent.

* Sepulchret. Anatom. Tom. i. pag. 210. 212.

It appears from the history of this disease, that the first symptoms of it appear in the nervous system. The patient has disturbed sleeps, becomes sorrowful and sad; then follows a spontaneous lassitude, with pains like those of the rheumatism in the part that was bitten, which spread more and more through the adjacent parts: at length, the disease increasing, convulsions follow, and the patient often dies convulsed. When he becomes hydrophobous, if he even touches any kind of liquor, he is immediately thrown into convulsions. It is also probable, that the impossibility of swallowing liquids arises from a convulsion of the muscles inservient to deglutition; for it is remarkable, that the muscles of the face are wonderfully distorted when they bring liquors to their mouth. But since, by the continual tossings, watchings and sweats, the more fluid parts of the humors are exhausted, while no kind of liquids can be taken into the body, therefore it is dried up, a fever is kindled, and an inflammation produced, which, from the malignity of the poison, or the putrid acrimony occasioned from want of drink, quickly turns into a gangrenous disposition, corrupting every part.

From all these particulars the curative indications seem to be, 1. To remove that disorder of the whole nervous system which excites convulsions in the organs of deglutition. 2. To prevent the future inflammation by the antiphlogistic method.

Cælius Aurelianus of old observed, that the seat of the disorder was principally in the stomach, gula, and parts adjacent. This is also confirmed by the great anguish and oppression felt about the præcordia; and when any kind of drink is offered, the stomach swells, and bilious matter, brown and foetid, is discharged by vomit; which always relieves this oppression.

It now remains, to confider thofe means which have been obferved to be ferviceable in the cure of this difeafe, whether prophylactic, or therapeutic.

A P H. MCXLIII.

THE prophylactic cure requires, 1. That the part affected with the poifon, together with thofe adjacent, be immediately deeply fcarified, and a great quantity of blood taken away, by applying the larger fort of cupping-glaffes, which attract ftrongly; or the part may be burnt pretty deep with the actual cautery, and afterwards kept in a ftate of fuppuration, by efcharotics. In the mean time, from the opening unto the clofing of the wound, let the parts be always fomented with a brine prepared of fea-falt and vinegar; and this method is to be continued for fix months at leaft. 2. The clothes, or other things, that have been either touched, or infected with the poifon, are to be carefully avoided, or deftroyed. 3. Immediately after the infection, the patient is, with a deal of apparatus, to be frightened and even threatened, and then plunged into the fea, or a river, keeping him under the water for fome time, then taking him up again, and plunging him as before, repeating this feveral times with the fame precautions: for thefe immerfions cure rather by difturbg the fpirits, than by any virtue in falt water, as we are taught by a fatal example in a man, who was fhipwrecked after he had been bitten, fwam for many hours in the fea, and was often a confiderable time under the waves; and yet was afterwards feized with

with the hydrophobia. The patient after this, is to be frequently and briskly purged with rhubarb, agaric, and the juice of elder-bark.

4. Let him be sweated every morning fasting, with spiced vinegar, sea-salt, and hot water.

5. Let him daily foment his feet and hands in warm water, wash his head, gargle his mouth, and swim frequently. 6. Let him frequently drink cold water, and bring it up again by vomiting; after which, what he drinks should be acidulated; the diet should be moist, easy to digest, and laxative, which may be given in such a large quantity, as to be easily rejected by vomit. He must also abstain from a free use of spices, wine, and heating things, and from too much exercise either of body or mind.

1.] Immediate deep scarifications are recommended by the unanimous consent of all physicians, as well the ancient, as the modern; but they placed their greatest hope, in keeping the wound open a long time. *Galen* gives us a remarkable instance of this method of cure, in his book de Sectis. *Diascorides* expected the greatest relief from the actual cautery, and from washing the wound with brine after the eschar is thrown off, to hinder its healing up; or if it should close up before the fortieth day, a fresh wound must be made either by the knife, or the cautery. The moderns have observed, that a superficial burning is not sufficient. It must be deep, that the fire may reach to, and entirely destroy the poison; after this a suppuration must be promoted and kept up for a long time, that the remains of the poison may be carried off in the matter discharged.

2.] This is a necessary caution, as the poison may be communicated to the body by handling infected clothes, as was before observed.

3.] The ancients placed great confidence in this method of plunging into water; however they seem not to have used it by way of prevention, but only when the patient was seized with the hydrophobia. But it has been found most successful when it has been hastily executed, with great apparatus and bustle, so as to excite terror. The Dutch sailors who live near the sea, are so well acquainted with this practice, that they completely finish the immersions of the patient, notwithstanding any threatenings or supplications to the contrary, carrying them sometimes to a degree that endangers a suffocation; and then, as *Tulpius* remarks, the cure is happily effected. As cathartics prevent a collection of foul humours in the stomach, it will be necessary, after immersion, to give often such as operate briskly, especially those which are called hydrogogues; for these dissolve the humours, and thus the poison will be sometimes expelled the body. But purges are the more beneficial, as the seat of the disease is chiefly in the stomach and parts adjacent.

4.] We learn from observation, that one effect of the canine poison is to dissolve the humours, and change them into a putrid state. In this case, vinegar is a most efficacious remedy, as it resists all putrefaction; but it is most of all beneficial when it is medicated with rue, horehound, and germander, for in this form it proves a most certain sudorific. A small quantity of sea-salt is added, which likewise resists putrefaction. This mixture diluted with water and drank hot in the morning, in bed, soon procures a sweat, by which the cutaneous pores are set open, and thus any remains of the canine poison adhering to the skin may be easily removed.

5.] The intencion of warm bathing, &c. is to reduce the body to a state directly opposite to that observed in the hydrophobia.

6.] All these render the humours sufficiently thin, and prevent their putrefaction. A gentle vomiting

Aph. 1144. Of the Canine Madness. 287

is sometimes excited by filling the stomach, and the body will be kept open by a moist and loosening diet, by which the *primæ viæ* will be secured from an accumulation of putrid humours. The mild spices diluted in water, and used in moderation, may be of service, as they promote perspiration and sweat; but to raise a violent heat, or greatly to increase the velocity of the blood, does not seem proper in this malady, as a mild and thin state of the humours is required.

A P H. MCXLIV.

BUT the cure ought to be attempted in the first stage, or in the beginning of the second, especially as a neglect here may be attended with fatal consequences. It is very probable, and it is confirmed by a few trials, that the following method ought to be pursued. 1. Immediately, upon the first signs of madness, the disorder is to be treated as one highly inflammatory, by bleeding from a large orifice, even till the patient faints; soon after, clysters are to be injected of warm water, mixed with vinegar, some nitre and salt; and thus bleeding and clysters are to be boldly repeated, and more frequently than is required in most other diseases. In the intervals, the patient is to be blind-folded, and thrown into a pond, or cold water is to be thrown upon him, till he no longer dreads the sight of it; then force him to drink a large quantity of cold water, and towards the evening of the day, in which he has been thus harrassed, let sleep be procured. His diet must be very slender, and always moistening.

The

The whole history of this disease, and some successful cures, plainly shew, that it ought to be treated as one that is highly inflammatory, and speedily tending to a gangrene. Therefore the most powerful antiphlogistics, more especially bleeding, are here to be used more liberally than in most other acute distempers. See Acad. des Sciences, P'an. 1699. Med. Essays. Tom. i. pag. 283. Clysters are likewise of great use both to free the bowels from putrid contents, and to supply the blood with those liquids which the patient dreads to swallow. Proper forms of such clysters are given in our Author's *Materia Medica* under the present aphorism.

When these evacuations have been made, and the signs of the hydrophobia appear, the patient is to be plunged into cold water, or if that cannot be done with conveniency, a great quantity of cold water must be poured over the whole body. That the hydrophobia has been cured by this method we are certain from undoubted observations. See Acad. des Sciences P'an 1699. pag. 58. As all these things fatigue and disturb the patient, it will be necessary to procure him a quiet sleep, for which purpose, an emulsion of the cold seeds with diacodium, or a proper dose of opium may be safely given.—But as there is a great dryness in this disease, the diet must be moistening, and easy of digestion, such as decoctions of barley, rice, oats, almond emulsions, and the like, which, at the same time resist putrefaction.

A P H. MCXLV.

AS this method of cure is founded on the nature of the disease in all its circumstances, and also on the rules of art, nothing can be more pernicious than to kill the patient by sharp, heating, and drying medicines, which irritate the nervous system, and which are, in
this

this case, as bad as poisons, the patient being already dried up with the disease; and again, nothing can be more cruel than to neglect all means of cure, or to suffer the miserable patients to be strangled.

A P H. MCXLVI.

NOR ought we yet to despair of finding a peculiar antidote for this poison, as antidotes have been found for other poisons equally destructive.

It is certain that the Indians are acquainted with the most deadly poisons, and that they are also possessed of their antidotes, which they obstinately conceal from the Europeans. A poison, which, by slightly wounding a fowl, occasions speedy and sudden death, is rendered unactive by a little soft sugar: for if some powdered sugar be thrust into the crop of the fowl as soon as it has been wounded, the animal receives no harm.—But as some late experiments give room to hope great things from the use of quicksilver, I shall relate with brevity the reason of trying this practice.

From the history of the disease it appears that the poison is principally lodged in the saliva, and that it will even remain a long time active in the dried slaver. It appears also, that a wound inflicted in any part of the body infects the saliva when the patient becomes hydrophobous; but if the saliva is immediately infected by kissing, or receiving the breath of an hydrophobous person, or, if the bite was inflicted in the face, especially near the salivary glands and ducts, the poison then produces its effects sooner. Moreover, hydrophobous patients discharge a great quantity of frothy saliva, as if nature endeavoured to throw off the poison by this evacuation. Therefore, as mer-

cury solves the humours and produces a copious secretion and excretion through the salivary glands, it was thence inferred, that mercury would forward the attempts of nature by these outlets, and more easily expel the poison.

Palmarius applied sublimate and red precipitate to the wound, but with no other view than to enlarge it by their erosion, and to cause a greater afflux of humours to the wound by their irritation. In the Transactions of the Royal Academy of Paris, the use of mercury was proposed by way of doubt; but *Desault* advancing, that the canine poison consisted of minute worms, without proving his position, would have the cure attempted by anthelmintics, and therefore believed *Palmarius's* powder gained its reputation from the anthelmintic ingredients of which it consisted. He, for this reason, anointed the wound, and parts adjacent with a mercurial ointment, which had very good effects, and at the same time gave *Palmarius's* powder. But mercury, or its preparations, have been given inwardly for the cure of the hydrophobia. The Chinese use the following, which they account an infallible remedy. *R Moschi optimi gr. xvj. Cinnaber. Nativ. Facitizæ āā. gr. xx.*—These are separately to be reduced into an impalpable powder, and taken in a little arrack. This commonly throws the patient into an agreeable sleep and perspiration within two or three hours. If it has not this effect, they repeat the dose, and doubt not of its curing. But this medicine is accounted prophylactic, if it be given immediately after the bite, or as soon as it can be got ready, and thus the patient is secure for one month, at the end of which the same dose is to be repeated. When there are signs of an approaching hydrophobia, the second dose of the powder must then be taken three hours after the first. That this method has been attended with success we are assured by *Sauvage* and Dr. *James*, and as the efficacy of musk is well known in petechial,

chial, convulfive, and other malignant diforders, a part of the cure feems defervedly to be afcribed to the mufk.

But other preparations of mercury have been ufed without any mufk, with fuccefs. Twelve grains of turbith mineral were given to two mad dogs, the day following twenty-four grains, and upon the third day forty-eight grains. A falivation enfued, with vomitings and purgings, and the difeafe was fo far fubdued, that they readily drank warm milk. Upon the fourth day twenty grains more were given to one of the dogs, and none to the other. The former flavered exceffively, and feemed tormented in his bowels; however he recovered, as well from the danger of the difeafe, as of the remedy, whereas the other dog relapsed and perifhed. This method was tried upon two hundred animals bitten by mad dogs, and not one of the whole number was loft. Nor has this method been lefs fuccefsful upon mankind than upon brute animals. For a youth bitten by a mad dog, was fix days after feized with an uncommon dejection of fpirits, tremors, difturbed fleeps, and a fubfultus of the tendons. In the evening, four grains of turbith mineral were given in a bolus, with one fcruple of lapis contrayerva, and a little theriaca andromachi. The enfuing night he fleepd a little and sweated; the next day he had two loofe stools. The fame bolus was repeated the following evening; he fleepd more, and sweated largely; and after two stools all the fymptoms were abated. In the evening he took a third bolus; he fleepd quietly, sweated profufely, and arofe the next morning in health and ftrength. He was after this plunged daily in cold water for a fortnight, and lived for the future in good health. But although turbith mineral is fo efficacious a remedy for the cure of canine madnefs, yet the wound ought to be kept open a long time, in order to difcharge the received poifon; for a perfon bitten by a mad dog, who at the fame time had a

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gonorrhæa, took frequently mercurius dulcis, but
the wound being treated in the common manner soon
dried up, and in a month's time he was seized with
the hydrophobia and perished.

A P H. MCXLVII.

BUT hitherto there has been no antidote discovered, that can be depended upon in the cure of this terrible disease; nor do we know of any that has been tried, that is in every respect unexceptionable; but they owe their credit either to speculation, or the confident recommendation of others; not even excepting *Æschbrion's* secret of burnt crabs, mentioned by *Galen* and *Oribasius*; nor the famous opiate of *Scribonius Largus*, so infallible in the Sicilian madness; nor the advice of *Peregrinus*, to put on the hyæna's skin; nor the ashes of river crabs with theriaca, commended by *Aetius*, *Rufus* and *Posidonius*; nor the boasted antidote of *Palmarius*; nor the powder of tin with mithridate, so magnified by *Mayerne*, *Grew*, and *Hunters*; nor the root of the cynorrhodon, or dog-rose, revealed in holy dreams; nor the lichen cinereus terrestris; nor pimpinella; nor the burnt liver of the mad dog, and such like magnificent trifles.

Of the S C U R V Y.

A P H. MCXLVIII.

THE Scurvy is a disease very common to those who live near the northern seas, is the cause of many other diseases, is neither a new disorder, nor unobserved by the ancients, although not accurately described by them, as they could neither sail nor travel into the coldest regions of the globe, where this disease chiefly rages.

It is certain that the scurvy was not so frequent among the ancients, as it is now among the moderns, which has induced many eminent physicians, well read in the works of the ancients, to take the scurvy for a new distemper, and that it began to spread about the middle of the sixteenth century. Certain it is, that *Forestus*, who flourished about that time reckoned the scurvy a new disease. Besides, the name by which the disorder is now known, is not to be found in the writings of the antient Greek or Latin physicians; nor is it derived from either of these languages: but the northern inhabitants seem to have given the present name, as appears from *Olaus Magnus*, who calls it *Schorbuck*, i. e. a painful and tormenting ulceration of the fauces, and stomach, and *Schoerbuch*, i. e. foremouth.

Hippocrates,^a mentions a complaint in which there are many symptoms observed in the scurvy, but then he ascribes it to the spleen, and orders a caustic to be applied to it, if it continues obstinate. In another place, he describes a disease which he calls *ileon*

^a Histor. Natur. lib. xxv. cap. 3.

sanguineum, and in which the breath stinks, the gums fall from the teeth, the nose bleeds, the legs ulcerate, &c. *Pliny*^a mentions a disease which seized the army of *Germanicus Caesar* while it lay encamped on the other side the Rhine. In two years the teeth fell out, the gums rotted, &c. but he ascribes this to the badness of the waters, and says that the physicians call it *Stomacace*, and *sceletyrbe*, that is, *foul-mouthed* and *an instability of the legs*. The first of these appellations is proper enough, since disorders of the mouth are so frequent in the scurvy; but *σχελοτύρβη* has a different signification, being defined by *Galen*,^b “a kind of
“paralysis, by which one is unable to walk straight
“on, but wheels sometimes to the right side, and
“sometimes to the left, &c.” Now although a palsy sometimes comes upon the scurvy, yet *σχελοτύρβη*, seems not to include the definition of a scurvy.

From all which, we may reasonably conclude, that the scurvy was not altogether unknown to the ancient physicians, but yet not very accurately described by them, because it rarely fell under their observation; as those whose writings are handed down to us lived in the southern climates, whereas the northern parts of the world are chiefly subject to this disease. Add to this, that the worst kinds of the scurvy happen to sailors who make long voyages, and live for many months upon salted, or smoak-dried flesh and fish; and long voyages were never undertaken in the times these antient physicians lived, the use of the compass being not then known.

A P H. MCXLIX.

AS this disease often deceives by the surprising variety of its symptoms, it can be by no method better known than by giving a com-

^a Hist. Nat. Lib. xv. cap. 3. pag. 629.^b Definit. Med.

Aph. 1150. Of the SCURVY. 295
plete history of it, and from thence to deduce
its nature and cause.

All physicians who have written upon the scurvy, confess the difficulty there is in determining the pathognomic signs which distinguish the scurvy from other diseases. For it will appear by what follows, that the symptoms are often changed in the course of the disease,—that in the beginning there are many in common with other disorders,—that when it becomes inveterate, it affects one part of the body more than another, and in such a manner, that the most accurate observers have confessed, that two scorbutic patients hardly ever complained of symptoms exactly alike. In order therefore to fix the diagnosis of the scurvy, the history of the disease itself ought first to be given, which enumerates the antecedent causes, and the order of the symptoms that successively follow one after another, and by this method arrive at some certainty concerning a disease, which, lurking under the mask of other diseases, has so often deceived the inattentive physician.

A P H. MCL.

THE scurvy is common to the inhabitants of *Great Britain, Holland, Sweden, Denmark, Norway*, and those of the north of *Germany*; so that it chiefly invades the northern climates, and particularly those who live near the sea, or in places that are often overflowed with salt-water; those who live near lakes and marshes, or on a fat spongy soil that lies low, and between high banks that confine the waters. It also invades chiefly, those who are idle, of a cold constitution, and live, during the winter, in damp rooms paved with stones or tiles, sea-faring

faring people, who live upon salt and smoak-dried meat, biscuit, putrid and wormy water; and those who use the like diet, whether at sea, or on shore. It is also common to those who feed too much upon water-fowls, salt-fish, dried either in the air or in smoak, or upon beef or pork prepared in the same manner, or upon mealy unfermented substances, as peas, beans, salted chese, strong, and very old; those who are subject to melancholy, madness, hypochondriac and hysteric disorders, and more especially those who have taken too large quantities of the Peruvian bark.

It appeared at Aph. 1148, that the scurvy chiefly invades the northern nations, yet this does not seem to be altogether the effect of severe cold, but rather of other causes. For in the *East-Indies*, under the torrid zone, and in *France*, the scurvy rages during the summer heats. An eminent physician* reflecting on this was led into opinion, "That the true and "primary cause of the scurvy, was a want of fresh "vegetables," and he has indeed established this opinion by a great number of solid arguments. But the northern nations being frozen up in winter, and the earth covered with snow, so that no sort of vegetables can grow, the inhabitants are obliged to live upon salted or dried flesh and fish, which we have observed to be a cause of the scurvy.

Those who live near the sea, &c.] Because the air of such places is tainted with the putrid effluvia of bodies thrown upon the shore which soon corrupt and putrify. For the same reason, those who live near great lakes of stagnant waters, or in marshy places, are afflicted with the scurvy; yet we often see the inhabitants of such places support this disease

* Baxtram de Scorbuto.

a long time with very little uneasiness, being enabled to do so by their perpetual labours; for

It also invades chiefly those who are idle, &c.] It was before proved that the want of muscular motion disposed the humours to a glutinous viscosity, and we shall shew at Aph. 1153, that this viscosity is always attended with acrimony. Hence weavers, taylor, and those living in such damp situations, who are idle, or brought up to sedentary employments, are more severely afflicted with the scurvy than any other rank of people

And live during the winter, in &c.] This is particularly the case of the Dutch, who live in apartments under the earth, commonly called *cellar-kitchens*, the ground of which they pave with stone, and line the walls with tiles, knowing well, that the damp would soon rot and destroy all wooden materials.

Sea-faring people who live upon, &c.] To this kind of diet, sailors are obliged to submit; for in long voyages neither flesh nor fish can otherwise be long preserved sweet.—It is true they sometimes carry poultry, hogs, sheep, &c. which they feed on board to supply them at times with fresh meat and broth, but then these are seldom laid in, in such quantities as are sufficient to supply the whole crew. Hence the humours grow viscid, oily, and earthy, and contract a muriatic acrimony.

Who feed too much upon water-fowls, &c.] Water-fowls live mostly upon fish; and as fish soon putrefy, birds that live chiefly upon them yield a nourishment that spontaneously inclines to putrefaction. Besides, fish abound with a fat oil, therefore piscivorous animals have all of them more or less of the same rancid taste; but such a rancid acrimony is much worse than that which arises from a simple putrefaction, and is more difficult to correct, and wash out of the habit, when once it has infected the humours. For the same reason, salted fish and flesh strongly retain the salt with which they are cured;
for

for even a long continued maceration and boiling will not suffice to free them again from the salt. But as the Dutch are particularly fond of these sorts of provisions, and many of them have even an aversion to fresh meats; this is again another reason why they are oftener than other people afflicted with the scurvy.

[Mealy unfermented substances.] Because these produce a glutinous viscosity of the humours, more especially if those who feed upon them use little or no exercise. See Aph. 69.

[Salted cheese, &c.] Cheese, although prepared from milk, which is aced, does by age incline to an alkaline putrefaction. See Boerhaav. Chem. Tom. ii. pag. 301.

[Subject to melancholy.] It appears from what we formerly said upon the causes of melancholy, that many of them likewise favour the production of the scurvy, as they render the humours viscid, and dissipate the more fluid parts. Hence a near affinity between the atrabiliary and scorbutic acrimony. And *Eugatenus*^a has pronounced, "that those who have become melancholy from a poor diet, were either afflicted with the scurvy, or that the scurvy was complicated with other diseases." It is likewise observed by the writer of Lord *Anson's* voyage, that the sailors afflicted with the scurvy became pusillanimous, and were terrified even upon the most trifling occasions. And he further remarks, that if any thing happened that seemed to oppose their happy return to their native country, the violence of the disease presently increased; and that those who were as yet able to do some duty, were immediately obliged to take to their beds.

More especially those who have taken too large, &c.] Obsolete intermittents render the humours viscid and acrimonious, and at the same time relax

^a. De Scorbuto, pag. 6.

the solids; so that a concurrence of all these causes sometimes disposes intermitting fevers to terminate in the scurvy, or other chronical distempers. But when the bark has been given for the cure of such obstinate fevers, the morbid changes made in the humours and solids, by the fever itself, has been unjustly ascribed to the bark. But it is sufficient here to observe that *Sydenham* has remarked scorbutical symptoms to have followed a too liberal use of the bark, and that these would not yield to any but scorbutic remedies.

A P H. MCLI.

WHEN the scurvy seizes, it commonly begins, increases, and comes to its height, with the following symptoms.

1. There is an unusual lassitude, dulness, and a strong inclination to sit still and lie in bed, a spontaneous lassitude, and sense of heaviness throughout the whole body, a pain of all the muscles like that arising from too great fatigue, especially in those of the loins and thighs; great difficulty in walking up or down hilly places; and even in the morning when they awake, their limbs and muscles feel as if they were tired and bruised.

2. The respiration is difficult, laborious, and even in a manner lost upon the least motion; the legs swell, then subside and swell again, and from their weight become hardly moveable; the skin is spread over with red, brown, yellow, or violet spots; the face is of a pale tawney colour; the mouth begins to have a fetid smell; the gums swell, become painful, hot, itching, and bleed upon the least pressure; the teeth,
divested

divested of the gums, loosen; wandering pains of various kinds seize all parts of the body both external and internal, producing wonderful gripes, pains in the side, stomach, ileum, colon, kidneys, gall-bladder, liver, spleen, &c. together with various hæmorrhages, but of the slighter kind.

3. The gums putrefy, inflame, stink intolerably, bleed, and mortify; the teeth loosen, turn yellow, black, and at last carious. The veins under the tongue grow varicose; there are frequently fatal hæmorrhages from the external skin, without any wound, and likewise from the lips, mouth, gums, nose, lungs, stomach, liver, spleen, pancreas, intestines, womb, kidneys, &c. Ulcers of the most obstinate kind, that yield to no sort of applications, which readily terminate in a gangrene in every part, but more especially in the legs, and which, for a long time, emit at dressing, a very fetid smell. In the skin appear scabs, crusts, and a dry and gentle kind of the elephantiasis. The blood taken from a vein in this state of the disease, is, in the fibrous part, black, grumous, thick, and yet of a loose texture; the serous part is salt, acrid, and has a yellow or green mucus upon the surface. The pains are now violent and sharp, swiftly shooting through every part, but grow worse in the night-time through all the limbs, joints, and viscera: livid and black spots appear also upon the skin.

4. There are also, in this advanced state of the disease, various kinds of fevers, such as burning, malignant, intermitting of all kinds, irregular,

irregular, periodical, and continual, which commonly bring on an atrophica, or wasting; a vomiting; diarrhæa; and a dysentery; a violent strangury; faintings and anxieties that are often suddenly fatal; a dropsy; consumption; convulsions; tremors; a palsy; contractions of the limbs; black spots; a vomiting and purging of blood; a putrefaction and wasting of the liver, spleen, pancreas, and mesentery; from whence the infection quickly spreads to other parts.

A P H. MCLII.

FROM what has been advanced, the nature and effects of the scurvy may be readily known.

For an unwholesome diet, and the causes enumerated at Aph. 1150, first vitiate the blood, and then all the other humours, with a viscid lentor, that renders the circulation difficult through the narrow extremities of the vessels; and that as the disease increases the lentor is joined with acrimony. But the effects are various, according to the degree and nature of the acrimony, and as it affects the different parts of the body.

A P H. MCLIII.

HENCE also it is evident, that the proximate cause of a scurvy is such a state of the blood, as renders it too thick in one part, and too thin in the other parts, joined with an acrid, saline, alkaline, or acid acrimony: which differences are particularly to be considered and distinguished.

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The human blood consists of very different particles, some of which readily form themselves into a solid mass, while the others being much thinner and less cohesive, easily separate and form a distinct fluid. From these two different states of the blood, all the symptoms of the scurvy are very intelligible, as will appear in the following aphorism; and therefore it is with great reason affirmed, that these two conjunctly constitute the proximate cause of the disease.

A P H. MCLIV.

AND from the knowledge of these, founded upon the history of the disease, all the symptoms, however wonderful, may be easily deduced.

The truth of the proximate cause which we have here assigned for the scurvy, is further confirmed from the symptoms of the disease itself, notwithstanding they are so numerous and surprising. For in the beginning the blood is thick, although as yet no signs of great acrimony can be discovered; hence arise that slothfulness and heaviness, with a sensation of pain in all the limbs, which are generally the attendants of an invading scurvy. But as the disease advances, the lentor increases; hence a difficulty of breathing from the slightest motion of the body; for the thickened blood cannot pass without uneasiness through the capillary branches of the pulmonary artery, and from the same cause the return of the venal blood to the right ventricle of the heart is retarded; whence a swelling of the legs, &c. as was observed at Aph. 1151. No. 2. At the same time, the acrimony lodged in the more fluid parts of the blood, begins to increase and shew itself in the different humours secreted from the blood.—The urine becomes more acrid, and saturated with contents,
which

which gives it a higher colour,—the saliva too is changed from its mild nature, frets the gums, and gives them pain and uneasiness. If the acrimony be of an alkaline nature,—the mouth begins to stink, from the speedy putrefaction the morbid saliva undergoes in the mouth from the ambient air; and the gums that are constantly soaked in the putrescent saliva will be corrupted, and consequently the ill smell of the mouth increased. If the pancreatic juice, which resembles that of the saliva, be vitiated together with the bile, there will follow pains in the stomach, ileum, colon, &c.—But the vessels themselves will begin to be dissolved by the acrid humours that pervade them, especially the smaller vessels whose coats are less firm; hence hæmorrhages will ensue, but such as are slight at first.—But all these symptoms are more remarkable in the putrid scurvy; for where the prevailing acrimony is either acid or muriatic, the symptoms are much milder, and do not so hastily increase. When the putrefaction spreads, the gums dissolve into a cadaverous filth that soon rots the teeth, and sometimes even renders the maxillæ carious; and when it comes to a high degree, it so dissolves the texture of the blood, that it can be no longer confined within its proper vessels, but either escapes through their extremities, or erodes the blood vessels, and produces dangerous hæmorrhages, as was observed at Aph. 1151. No. 3.—As for the symptoms which attend the very worst kind of scurvy, they may be easily deduced from the vitious state of the humours; especially if we consider that the solids are not only eroded by the prevailing acrimony of the humours, but the blood is likewise deprived of good chyle that ought to reinstate the great waste of parts made by the constant actions of life.

A P H. MCLV.

ALL which are again more clearly confirmed, by the rules which a successful or unsuccessful method of cure have established; of which the principal are these following.

A physician should first consider the causes of a disease,—carefully examine all the symptoms, and thence conclude what is to be done towards the cure. But while they administer proper remedies, they also attend to their effects. If they prove successful, they are then certain that they have discovered the nature of the disease. If otherwise, they conclude they have not yet discovered the cause of the disorder, and therefore use all their endeavours to find out wherein their mistake lies. This is the doctrine of the *juvantia* and *ledentia*, that has been of such great use to the art of healing; as it confirms the diagnosis and curative indication, or speedily detects the error he may have committed.

A P H. MCLVI.

IN this disease therefore, *that which is thick must be made thin; that which stagnates must be rendered moveable; and that which coheres, must be resolved, and restored to a state of fluidity.*

A P H. MCLVII.

AGAIN, *humours that are too thin must be thickened; those that are acrid must be softened and corrected; both in general and in particular.*

A P H. MCLVIII.

AND while we are correcting the one, (1156.) we must always be careful not to increase the other (1157.) so that there is occasion for the greatest skill, to treat this disease with success.

This is a practical admonition of the last importance; the neglect of which has been the cause of the most unhappy effects. We formerly recommended at Aph 135, a great number of attenuants for the cure of obstructions, which, however, ought not to be promiscuously used in the scurvy. For if a putrid alkaline acrimony prevails, the use of alkaline salts either fixed or volatile, and of soaps composed of fixed or volatile alcalis and oils, would be injurious, because they increase the acrimony, although they attenuate the thickness of the humours. For the same reasons, mercurials are also here improper, for although they effectually resolve the humours, yet, at the same time, they change them into a putrid liquamen, as we see in mercurial salivations. We must also consider, that the viscera are already weakened by the disease, and are unable to bear the shocks of mercurials. Nor ought we to confide in the use of the most celebrated antiscorbutics, since many of them may be highly mischievous, unless they are given in the proper stage of the disease, and have qualities opposite to the acrimony that prevails. But this will hereafter be made more evident.

A P H. MCLIX.

ACRID evacuating medicines always exasperate this disease, and frequently render it incurable.

It may be necessary to empty the primæ viæ, but then this must be done only by such medicines as have the most gentle stimulus.

A P H. MCLX.

THerefore, in the first stage of the scurvy described at Aph. 1151. No. 1. we are to begin with a gentle attenuating and opening purge, given in a small dose, but frequently repeated. 2. To persist in the use of attenuating and digesting medicines. 3. To complete the cure with milder specific antiscorbutics, taken for a long time, in the form that is most agreeable to the patient. 4. To regulate, at the same time, the six non-naturals so as to be contrary to the productive causes, Aph. 1150.

In the first stage of the scurvy, such symptoms attend as clearly demonstrate a thickness and imperviousness of the humours, but no great acrimony, nor any corruption of the viscera.

1.] A gentle purge is in this state necessary, to clear the primæ viæ from all indigestible humours that are often there collected from a bad diet. There are several forms of cathartics in the *Materia Medica*, under the present aphorism, which answer this intention. It is observable that the *Pil. Coch. major.* composed of scammony, colloquintida, aloes, &c. are there recommended; but then the dose is small. Besides, in this stage of the scurvy, there is no great acrimony, nor yet a putrefaction of the humours. It is usual to repeat these cathartics once in three or four days; during which interval attenuating and stomachic medicines may be given. Here we must always remember the rule of *Hippocrates, si qualia purgari decet, purgentur, &c.*—If therefore that
loth-

stothfulness which attends this stage of the scurvy begins to abate during the use of evacuants, we may then be convinced of their utility, but, on the contrary, if the patient perceives a weakness and faintness, we are to abstain from their further use. Fat and leucophlegmatic persons bear repeated purges without any injury, but those of a tense and dry habit do not bear purging so well.

2.] For in this second stage of the scurvy the humours are thick. In our author's *Materia Medica* there are various forms of attenuating medicines recommended, out of which one may select what best suits the constitution of the patient. For example, to persons of a cold and lax habit of body, the warmer attenuants may be serviceable, such as the *tinct. sal. tartari, elixir proprietatis, sal volatil. aromatic. sapo starticianus, &c.* But to the hot and bilious, the crystals and cream of tartar, *sal polychrest. oxymel simpl. & scillitic.* but especially the juices of oranges, citrons, &c. which afford an acid and saponaceous juice, that effectually attenuates, and at the same time pleases by an agreeable flavour. The season of the year is likewise to be regarded, for in the summer heats we refrain from using the warmer medicines, which may be safely given in the winter.

3.] A number of medicines are recommended by authors, under the title of antiscorbutics, although they have not all of them the virtues ascribed; and therefore such are to be selected as suit the stage of the disease, and the constitution of the patient. It was formerly observed, that a scarcity of vegetables is one principal cause of the scurvy. For this reason, in the *Materia Medica*, under the present aphorism, are recommended such plants as may supply their want; namely, all the sorrels, the tender tops of burdock, red cabbages, chervil, succory, endive, nettle-tops, &c. which boiled in broths have very salutary effects.—Orange or citron juice, either mixed with food, or with wine and water is no less salutary.

For these patients are in a low, languishing condition; and Eugatenus observes that the pulse is small, weak, and unequal. In the catalogue of the anti-scorbutic plants, there are many that are agreeably aromatic, and, by their spicy fragrantcy, proper to recruit the languishing powers, such as southernwood, wormwood, marjoram, mint, &c. Moreover, such remedies are here recommended, as, besides their gently stimulating powers, are also proper to resolve and attenuate viscidities, as pimperl, brooklime, watercresses, &c. But in this stage of the scurvy, the use of these plants must be long continued; and although they may be given in divers forms, yet none seem less displeasing to the patient than when they are taken in ale or wine. Eugatenus* assures us, that an infusion of wormwood only in wine or small ale, has cured the scurvy. And I have known whole families cured by using for their common drink, ale, in which were infused the feeding tops of red cabbages cut small, with watercresses, or scurvy-grass, and a pound of fresh bruised horseradish.

4.] Unless the patient conforms to this regimen, all the other endeavours will be in vain; and the disease, though it be once cured by proper remedies, will return again from the same causes, which produced it at first. The Dutch live in the winter upon bacon and salt beef, so that by the end of the winter season they find themselves very ill with the scurvy; but in the spring, by the use of pot-herbs, and summer fruits the disease goes off, and is sometimes entirely cured.

A P H. MCLXI.

FOR the cure of the second stage of the scurvy, the same remedies which were directed in the preceding aphorism will here also

be proper. And moreover, the use of the more acrid antiscorbutics, either in the form of an expressed juice, a conserve, spirit, volatile salt, medicated wine, or ale; bathing, and washing the feet in antiscorbutic decoctions; hot and dry frictions, with specific spirituous liquids. Bleeding is frequently of service, as it carries off some part of the acrimonious juices, abates their erosion of the over-distended vessels, reveals from the viscera, and makes room for the internal use of proper remedies.

The symptoms enumerated in this second stage of the scurvy, Aph. 1151. No. 2. shew, that there is still a greater degree of thickness in the humours, than was observed in the first stage; for now the legs swell, and from their weight are hardly moveable; the respiration is more difficult, and almost suppressed by slight motion. Therefore the remedies directed in the first stage will be here useful, only adding some more acrid antiscorbutics that the increased lentor may be more effectually divided and attenuated, and the vital powers excited.—But the rules necessary to be observed in the administration of these will be laid down in the following aphorism.

Bleeding is frequently of service, &c.] It has been disputed by physicians, whether bleeding be serviceable in the scurvy. As the condition of the blood in this disease is either too thick in one part of it, and too thin, salt, and acrid in the other, many have imagined that bleeding was of the greatest service in the cure of the scurvy, since the vicious blood might be drawn off by repeated venesections, and at the same time more healthy juices supplied by good nourishment. But they ought to have considered that the loss of much blood hinders the assimilation of the best aliments into healthy vital fluids.

Moreover, the blood in this disease, by its thickness sticks in the ultimate extremities of the arteries, and admits into the veins only the more fluid and moveable parts, and therefore not the thick and vitiated part of the blood, but the thinner, is drawn off by venesection. *Eugatenus* also was taught by long experience, that scorbutic patients very ill support copious venesections; the truth of which is confirmed by the weakness of the pulse, and the faintings that attend this stage of the disease. Indeed if the vessels are too full, the plenitude may be lessened by bleeding, and at the same time, part of the acrimonious fluids carried off; but then care must be taken not to sink the vital powers, already in a languishing condition. It is also to be observed, that scorbutic pains sometimes resemble those of the inflammatory kind. In this case bleeding is of no service.

A P H. MCLXII.

BUT the more acrid the thinner parts of the blood are, the greater the heat, and fear of an hæmorrhage; or the greater the thickness of the blood, the sluggishness, coldness, and paleness of the vessels, specifics, either moderately astringent, and cooling, or heating and acrid, are to be used.

As the scurvy advances there are apparent signs of an increased acrimony, commonly attended with a slight degree of putrefaction, which resolves the humours, and renders them still more acrimonious; whence inflammatory fevers, and hæmorrhages, from an erosion of the vessels. In this state, the antiscorbutic remedies recommended in the preceding aphorism, will not be very safe; but such only as strengthen the solids, and correct the dissolved state of the fluids.

fluids. Of this kind are the docks, the polypody of the oak, the bark of capers, and the tamarisk tree, vinegar, &c. with others of the like kind enumerated in the *Materia Medica* under the present aphorism. But when there is a sensible coldness and sluggishness, or when the disease seizes one of a cold and phlegmatic constitution, the more acrid antiscorbutics may be safely used, even in its more advanced state. But where the signs are doubtful, or there is reason to fear a speedy putrefaction of the humours, it will be better to give the cooler antiscorbutics directed in the *Materia Medica*, most of which have also a resolvent power, and at the same time resist putrefaction.

A P H. MCLXIII.

BUT to remove the disorders of the mouth in this stage of the scurvy, we must use such remedies as are antiphlogistic, and antiscorbutic, and at the same time peculiarly proper to each kind of the scurvy.

Various forms of lotions for the mouth may be seen in the *Materia Medica*, proper to each sort of scurvy.

A P H. MCLXIV.

IN the third kind of scurvy described at Aph. 1151, No. 3, all the foregoing remedies will also be proper, only the patient must take large quantities of lenient antiseptic, and antiscorbutic liquors, such as will easily pass through the vessels, and gently promote sweats, urine, and stools; and these must be continued for a long time.

In this third stage of the scurvy there is a much greater degree of acrimony, and the humours much more disposed to putrefaction, therefore the cure ought to be conducted with greater precaution. If the hot and acrid antiscorbutics are here imprudently given, the acrimonious humours would be moved through the vessels with greater force, than their weak cohesion would be able to sustain; hence sudden and profuse hæmorrhages must ensue. In this case, the more gentle antiscorbutics are preferable, which at the same time, both resist putrefaction, and render the vessels more firm. For these purposes, the sorrels, docks, and the like sour plants are in high reputation, insomuch that physicians almost constantly join sorrel with scurvy-grass in the cure of this disease.

One principal intention in the cure of the scurvy, is to wash out the acrimony from the blood, and at the same time to attenuate the viscid lentor; both which are obtained by plenty of thin softening liquors, that easily pass through the vessels. For we see, that in healthy people all the acrimonious parts of the humours are either exhaled by the cutaneous pores, or secreted by the kidneys and carried off in the urine. It is therefore of use to promote these discharges,

A P H. MCLXV.

AS to the fourth stage of the scurvy, it seldom admits of a cure; however the method of cure is to be varied, according to the variety of the symptoms. Sometimes mercurials are beneficial; and so are the remedies directed in the foregoing aphorism.

From all these particulars duly considered, and compared with the symptoms of the disease, and with what has been observed in dissecting bodies

bodies that have died of the scurvy, it will be obvious, that to cure the disease, the physician must find out the nature of the peccant humour, and the particular kind of acrimony that prevails; and as this acrimony may be either saline and muriatic, acid and austere, alkaline and fetid, or rancid and oleous; and as we have before treated of these acrimonies in particular, as well as upon acrimony in general; from these particular circumstances a more regular method of cure may be derived. Hence also it will be apparent, why the whey of milk, butter-milk, and mineral waters, have so often cured the most terrible symptoms of a scurvy, and what these symptoms are. And why the acid juices of ripe summer fruits, as of oranges, citrons, lemons, pomegranates, meadow and wood-sorrel, vinegar, Rhenish and Moselle wines, are often specifics in the scurvy, and in what circumstances. Why austere and astringent remedies, as rhubarb, dock, tamarisk-bark, capers, rough wines, either of the black or red kind, and preparations of steel, have often such good effects, and in what cases. Why the most acrid aromatics, scurvy-grass, pepper-wort, the nasturtiums, wake-robin, horse-radish, pepper, ginger, the lesser acrid house-leek, volatile, and fixed alkaline salts, oleous, aromatic, and soapy, are often of service, without any other medicine. Why what is serviceable to one scorbutic patient, is hurtful to another; and lastly, why we ought not to consider the name of this disease, but to find out its particular genus, as if it were quite a different disorder.

In this last stage of the scurvy, there can be but little hopes of a cure; for all the symptoms now shew that even the viscera are corrupted; all, therefore, the physician has to do is to mitigate the symptoms, and to render the disease tolerable to his patient, which he is unable to remove. But if the disease, in this stage remains still curable, then such remedies only will be of service which were recommended in the foregoing aphorism.

As mercurials have sometimes cured the most obstinate diseases, physicians have attempted the cure of the scurvy by the same remedies, because the blood of scorbutic persons is, in its first stage, observed to be viscid and thick. In this state of the blood, a prudent use of mercurials may be of service; although it is certain that this stage of the distemper may be happily cured by the remedies before recommended. But when the mouth begins to stink, the gums to swell, &c. the use of mercurials may be justly suspected.—We proceed next to some practical corollaries, which are easily deducible from the foregoing principles.

Why the whey of milk, &c.] Because all these by their attenuating and diluting powers lessen the viscosity of the blood, and at the same time supply a watery vehicle to dilute the salts and oils, and carry them off by sweat, stools, and urine. But these remedies require vital strength to circulate them with the blood through the vessels, otherwise they would remain in the body and produce dropical swellings.

Why the acid juices of ripe, &c.] When the humours have degenerated into a rancid putrid state, scorbutic patients are happily cured by garden fruits, provided the viscera be sound. *Morin* cured great numbers of scorbutical patients in the hospitals of Paris, by a diet of sorrel and eggs; and *Eugatenus* affirms that barley with Rhenish wine has been highly serviceable in the cure of the scurvy.

Why austere and astringent remedies, &c.] Because the solids are sometimes so much weakened by the
the

the disease, as to break with the least force. In this case, the rough astringents recommended for the cure of weak and relaxed solids at Aph. 28. No. 4, will be highly serviceable, and at the same time thicken the blood, which in this state of the solids, is commonly thin and dissolved.

Why the most acrid aromatics, &c.] These are of service when the patient is pale, cold, and inactive, or appears of a bloated and swelled habit of body. But these must be used in moderate doses, lest by these powerful stimulants, the viscid lentor should be suddenly put into motion, and forcibly drove into the pulmonary vessels. See Aph. 871.

Why what is serviceable to one, &c.] Because in different patients, there are different degrees of the scurvy, and various kinds of acrimony in the humours. Thus the hot aromatics proper in cold phlegmatic constitutions, would occasion a fatal hæmorrhage, if they were given in that stage of the disease, in which the gums bleed and smell cadaverous.

Why we ought not to consider the name of, &c.] Nothing is more mischievous than upon hearing the name of a disease, to immediately adapt to it the remedies kept in the shops under the titles of antapopleptic, antipleuritic, &c. which, although they may be proper in some cases, yet they must in many be useless, and in others highly pernicious. Those only who would make the art *short*, which *Hippocrates* has pronounced *long*, will attempt the cure of diseases by searching the public dispensatories for a medicine whose title is opposed to that of the disease, and when they have found them out, believe themselves qualified to become great physicians. But the history of the scurvy sufficiently shews, how very different the disorders are, that are comprehended under one denomination, and how different the method of cure is in the different stages of the same disease.

Of a CACHEXIA, or Ill Habit of Body.

A P H. MCLXVI.

BY a cachexy is generally understood that disposition of the body, which depraves the nourishment thereof throughout its whole habit.

By the habit of the body here is understood, the outward appearance of it, which deviates from the usual conditions of health. It is also evident that a cachexy attends many chronical diseases. Thus in a scurvy, do not the difficult breathing, swelling of the legs, the pale-brown countenance, spots in the skin, &c. plainly denote a cachexy?

A P H. MCLXVII.

THIS disease therefore, acknowledges for its cause, either some depravity in the nutritious juices, or some defect in the vessels which receive them, or some weakness in the powers which apply them.

To preserve life and health there is required a constant supply of a nutritious juice to repair the wastes of the fluids and solids by the actions of life: the supplying of the body with this matter is called *nourishment*, and the application of it, *nutrition*.

A P II.

A P H. MCLXVIII.

THE depravity of the nutritious juices arises,

1. From such aliments as cannot be assimilated into parts fit to restore those that are lost: such are all mealy and leguminous food, such as are gross, fibrous, fat, acrid, watery, or viscid (Aph. 69.) All indigestible substances, as chalk, sand, cinders, lime, &c. 2. From a want of animal motion, or exercise, from idleness, inactivity, or from too much sleep. 3. From a defect in the digestive organs, their being either too weak, (Aph. 41, to 44.) or too strong, (Aph. 50, 92, &c.) or from a fault in the fluids themselves that is not easily to be corrected, (Aph. 60, 69, 76, 106, 107, 406.) and these may arise from numerous causes, as all excessive evacuations of what sort soever, vomitings, any kind of diarrhæa, or dysentery, all hæmorrhages, and a scirrhus disorder in any of the viscera, &c. and a retention of any thing that ought to have been secreted, or discharged.

When such aliment is taken, as by its viscid tenacity, coheres too closely together, as do many of the mealy substances, and legumens, the gross and fibrous parts of animals, and likewise meat and fish hardened by salting or drying in the smoak or wind; the chylopoietic organs are not able to extract from them such supplies of nutritious juices as are wanted to recruit the body; besides the chyle formed from them is too crude, and cannot be reduced to that degree of perfection which is required to make it a part of our fluids and solids. The stomach and
bowels

bowels are therefore in this case loaded with indigestible matter, and the blood being charged with crude humours, the whole mass of fluids degenerate from their natural state, and at length a cachexy ensues.

But fat substances being hard to digest, are retained a long time in the stomach, by which they often become rancid, and if these are not corrected in the duodenum by plenty of acrid bile, which renders this fat miscible with water, a rancid acrimony, highly mischievous, may be produced in the intestines. See what was formerly said of tough aliments at Aph. 25, No. 1, &c.

2. Those who lead an idle life, and indulge themselves in sleep, want that motion of the muscles which so much contributes to a brisk and free circulation of the blood, whence the chyle is slowly and imperfectly assimilated, and therefore the humours degenerating by degrees, introduce a cachexy. The truth of this we are taught by daily observation.

3. See what has been said upon the too great weakness and strength of the vessels in the comments to the aphorisms referred to in the text. But the fluids themselves may also degenerate divers ways, and sometimes may be so tainted, that a remedy cannot be easily found to correct them. Infants afflicted with an acid in the primæ viæ, do not thrive, but gradually waste away with a cachexy. A glutinous viscid collected in the primæ viæ may also hinder the preparation, perfection and separation of the chyle, and thus deprave the nutrition of the body: but if the like viscid infects the blood, it will produce all the symptoms of a cachexy. See Aph. 72. On the other hand, if an alkaline acrimony infects the humours, they are no longer fit to nourish the body, but waste and prey upon it. See Aph. 86. Add to these, that a plethora, if not timely relieved by bleeding, often occasions a cachexy, as we see in plethoric virgins when the menses are suppressed.

But

But an obstruction by intercepting the course of the humours through the vessels, may injure all the functions of the body, Aph. 120, and consequently produce a cachexy. But if the obstructed humours are collected in any part of the body, and there stagnate, they acquire a disposition different from that of healthy fluids, and can never be assimilated into them; but are by rest, and the heat of the body attenuated, and rendered more acrimonious, and being absorbed by the veins, infect the whole mass of blood, and render it unfit for nutrition. Thus a purulent cachexy, hardly curable, is produced by matter long confined in an abscess. But if matter absorbed can produce such a fatal distemper, what mischief are we not to fear from a gangrenous corruption, or from the ichor of an ulcerated cancer returned into the blood?

When our healthy humours are from any cause much diminished, the assimilation of the alimentary juices is but imperfectly performed, whence nutrition becomes depraved, and a cachexy ensues. But the greatest danger of all, is from a profuse and sudden discharge of healthy humours, as in persons wounded; in abortions, attended with profuse hæmorrhages; in the cholera morbus, which in a few hours almost empty the whole body. But even slower discharges of healthy humours, that frequently return, will so far exhaust the body, as to bring it into a cachexy.

But a scirrhous in any of the viscera may be also justly ranked amongst the causes of a cachexy. How frequently are cachexies produced, especially of the icterical kind, from a scirrhous disposition of the liver. Hence the functions of the liver will be injured, and the secretion of the bile hindered, and thus one of the requisites, namely, the cystic and hepatic biles, for assimilating the crude aliments will be wanting, whence nutrition will be depraved.

In a healthy person there are certain excretions to be made at stated times, which, if stopt or retained, the

the healthy nature of the humours becomes so depraved, as no longer to suffice to nourish the body. This is evident in a suppression of the menses, where too great a quantity of good blood being retained, it so far degenerates by degrees, as to render these patients bloated and leucophlegmatic, which soon throws them into a cachexy. Sometimes likewise there are morbid discharges, by which offending humours are carried off, and these being suppressed by imprudent treatment are productive of numerous mischiefs, and among the rest, of a cachexy. In children the hairy scalp ulcerates and discharges an acrimonious humour, which sometimes hardens into scabs of considerable thickness. If in these cases, the discharge of the humour is intercepted by the hardened scabs, or by the application of restraining remedies, there often follow convulsions, inflammations of the eyes, asthmas, &c. and if they survive these disorders, they become cachectic, till the excretion is restored either spontaneously, or by art. The same consequences often follow the drying up of ulcers in the legs of many years standing.

A P H. MCLXIX.

BUT it appears plainly enough, that the above-mentioned causes having once taken place, operate, either by lessening the strength of the solids, or by stuffing them up with fluids that cannot easily circulate through them; whence a twofold effect of this disease, namely, a tabes, a leucophlegmatia, or an anasarca.

It is certain, that the solid parts of our body are worn away by the continual actions of life: for if the hardest stones are excavated by the falling drops of water, are we not to expect much greater effects from fluids driven four thousand times in an hour by the
the

the force of the heart, through converging arteries, whose final extremities in most of the viscera are very soft and pulpy. We even see that the cuticle scales off every day, and is as often renewed again. Chemistry also shews, that some portions of the solid parts are contained in the saliva, in the bile, and much more in the urine: nor can we doubt but that a great many abraded parts of the body are carried off in the intestinal fæces. This waste must be again supplied or repaired, else the solids must fall away. But it is demonstrated in physiology, ^a that the restitution of the solid parts is performed by the humours themselves, that flow through the vessels, and abound with particles of the same nature with those which were abraded. But if these humours degenerate from a healthy state, they no longer retain those properties which enable them to recruit the wasting solids. For we find in healthy blood, and its serum, a kind of plastic tenacity, as well as in the humours from thence secreted; which is a quality necessary to enable the nourishing particles to adhere to the places to which they are applied. We see likewise that when the humours are dissolved, nutrition is depraved, and the whole body wastes away. When a depraved nutrition is from any cause attended with a dissolved state of the humours, they are then carried off by the sensible, and sometimes by the insensible evacuations, sometimes all at once, and sometimes very gradually. When they are precipitantly discharged by vomit, purging, or urine, the disease is then denominated, a cholera, a diarrhæa, and diabetes. But when they are gradually carried off by the insensible discharges, or by sweats, while the lost parts are not recruited by nutrition, the whole habit is wasted by a slow marasmus, which is called a dry tabes, or simply, an atrophy; which *Fernelius* ^b justly distinguishes from a cachexy, "in which the body appears full and bulky

^a Boerhaav. Institut. §. 463.

^b Lib. vi. part. 2. pag. 150.

“ enough, but is at the same time evidently diseased both in its substance and colour, whereas an atrophy, is when the body is not nourished by aliments, but wastes slowly, and by degrees, without any preceding cause.”—This is that kind of *tabes* which is so fatal to the English, and which *Bennet* * says is hardly ever cured.

But a cachexy is frequently joined with a leucophlegmatia, or an anasarca, because the cellular membrane which invests the muscles, swells with a watery humour there accumulated, of which we shall say more when we treat of a dropsy.

A P H. MCLXX.

BUT there are various diseases that commonly ensue, as the effects of a cachexy, according to the different colour, bulk, tenacity, acrimony, and fluidity of the stagnant fluids, namely, a white, pale, yellow, livid, green, black, or brown colour of the skin; a heaviness; a swelling under the eyes, and in those parts where the skin is thinnest; an inflation, and cedematous swellings in parts remote from the heart; palpitations of the heart and arteries, which are increased upon the least motion; urines that are crude and thin; spontaneous sweats, entirely watery; and at last a marasmus, or a leucophlegmatia, and dropsy.

We have already observed, that a cacochymy always accompanies a cachexy; but then this cacochymy is of various kinds, and produces various effects; and shews itself by distinct signs according as the humours degenerate from their healthy state by

* Theat. Tabidor. pag. 109.

over-thickness or thinness, or by acrimony of different degrees. The complexion will be variously altered; and the skin appear white, yellow, pale, and sometimes greenish, which may be easily distinguished in those parts where the vessels lie almost naked, and have no thick skin, as in the corners of the eyes, lips, mouth, fauces, &c.

But when a bilious or atrabiliary cacochymy attends an ill habit of body, there will arise different changes of colour, as was observed at Aph. 1094. And although a florid colour of the skin is usually a sign of healthy blood, yet where the blood is too thin, it is generally acrid, and the compages of the vessel tender, whence a rosy colour in the cheeks, while the body is gradually wasting.

But since a healthy blood is required to pass the substance of the brain, in order to secrete the subtil fluid of the nerves which serves for muscular motion; and since in cachexies the blood and its humours are depraved, the nervous fluid will be deficient both in quantity and quality.—Hence that readiness to motion, so remarkable in healthy people, will be here wanting, and the cachectic patient will hardly be able to drag his feeble limbs. It is moreover observable, that when the circulation is hindered through the vessels of any part, the said part will be presently seized with a sense of weight or heaviness. And as in a cachexy the humours are glutinous and sluggish, and therefore circulate with more difficulty through the vessels, hence again another cause of the heaviness perceived in the limbs.

As the chyle likewise is not sufficiently elaborated in this disease, the aliments either ferment or turn putrid, from whence again a great deal of flatus is generated, as was formerly demonstrated upon another occasion at Aph. 647.

The humours contained in the veins are propelled through them towards the heart, by the motion they receive from the arteries; and as the veins have no

pulsation but gradually widen in their course, the motion of the humours which flow from the arteries into the veins will necessarily be retarded; for this reason, the arteries and veins lie contiguous to each other in many parts of the body, that the turgid arteries may in their diastole, compress the neighbouring veins, and forward the return of the blood to the heart. Moreover the muscles, when they contract, press upon the circumjacent veins, and such as run betwixt them, and thus again the motion of the venal blood is greatly promoted.—But in cachectic persons, the action of the heart and arteries is languid, and the motion of the muscles is either neglected, or but weakly performed; whence those helps are wanting that contribute to forward the return of the venal blood to the heart. From the same cause, the larger veins are hardly able to empty themselves, and the smaller lymphatic veins which ought to absorb the lymph discharged by the exhaling arteries, from the greater and lesser cavities of the body, as they cannot easily empty themselves into the larger veins, already too full, nor absorb the whole which the exhaling arteries emit; hence the cellular membrane begins to swell with watery humours, and form oedematous tumours in such parts as are most distant from the heart, as in the legs.

But as the left ventricle of the heart can expel no blood into the aorta, but what it receives first from the right ventricle, which now receives but a small quantity, by reason of the slow return of the venal blood to the lungs, it is evident enough, why the pulse becomes weak and languid; and cachectic patients, upon the slightest motion, are seized with palpitations of the heart and arteries, and a laborious and difficult respiration.

In healthy people the urine is coloured, and deposits a sediment; but in cachectic patients it is almost without any colour, and is therefore called crude.

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This shews that all the functions are in a languishing state, and the circulation too weak to expel the perspirabile through the final extremities of the cutaneous arteries; whence, as *Aretæus** observes, “the whole body becomes rough, with a dry scaling of the cuticle, without sweat, and with an itching.” It is however to be observed, that an obstructed perspiration increases the quantity of urine, which is then discharged thin and crude, being diluted with that subtile vapour which ought to exhale through the skin. But when large quantities of such urines are made, or when spontaneous sweats abound, then follows an incurable marasmus; but if they remain within the body, they are then either collected in the larger cavities, or in the cellular membrane, and produce a leucophlegmatia, or a dropsy.

A P H. MCLXXI.

INvention can hardly fix any universal defect in the small vessels which are to receive good nutritious juices; yet too great contractility or laxity, and their bad consequences, may be admitted as causes; concerning which we formerly treated, at Aph. 24, to 58.

While the chyle mixed with the blood, flows with it through the vessels, it is by their action converted into a nutritious juice, as appears from the experiments of *Lower* and *Wallis*, and therefore, while the body is supplied with this nutritious fluid there can be no remarkable defect in the vessels. But when the vessels are either too much contracted, or too much relaxed, the humours soon degenerate from their healthy conditions, as was demonstrated in the comments to the aphorisms cited in the text: or there

* Lib. i. cap. xvi.

may be some local defect in the vessels, as when the orifices of the lacteals are obstructed, or when the *receptaculum chyli*, or the *thoracic duct* are compressed by a tumour; a case of which kind is related by Dr. Wharton*.

A P H. MCLXXII.

THE universal nutrition of the body is again hindered by a defect in the powers that apply the nutritious juices, which is truly the case, when the force of the circulation is either too languid, or too violent.

For although the nutritious particles be good, the vessels pervious, and neither too lax, nor too rigid; yet to complete the nutrition requires an application of the nutritious matter to those individual points of the body which are continually wasted by the daily actions of life. But to effect this, the motion of the liquids must be moderate; for if it be too languid more matter is retained within the body than is required, nor are the nutritious particles applied with a due force to the solids: whence the body is filled indeed, but not nourished. On the contrary, when the humours move with too great rapidity, the vessels are abraded, and consequently wasted, while the nutritious matter is too hastily carried along their sides, and therefore incapable of adhering to the wasted parts. Hence the reason appears why in most chronical diseases the body becomes turgid, and why in acute diseases the fattest person is so much exhausted in a fortnight's time. But see what has been said of the excess and defect of the circulation in the aphorisms referred to in the text.

* Adenograph. Cap. xi. pag. 50.

A P H. MCLXXIII.

FROM what has been said, the diagnosis of a cachexy is obvious; and a due consideration of the cause, duration, effects, and degree of the disorder, confirms the prognosis.

The diagnosis of a cachexy is obvious from the outward appearances of the body; but in the prognosis there are several particulars to be considered. For instance, when a cachexy arises from a bad diet, the indigestible humours may be carried off by a prudent use of emetics, and cathartics. When it arises, from a want of exercise, all those recover, who will change an idle for a laborious life. But when it springs from a purulent abscess, or scirrhus, &c. in any of the viscera, then it cannot be cured, until the cause is removed, which is commonly very difficult, and often impossible.

The duration of the disease will likewise vary the prognosis; for it will be easily cured in the beginning, unless it arises from an incurable cause, while the humours are only degenerating from a healthy condition. For when the humours are corrupted, as *Aretæus*^a justly observes, “The disease is hardly curable, and continues a long time; for it is a long time in forming, and does not arise from one defect in the body, nor from one injured viscus, but from a change of them all into the worst state. Hence inevitably arise dropsies, phthises, and wastings of the body, &c.”

But the effects of the disorder are also to be considered in forming a prognosis, as more or less of the viscera appear to be injured. Thus, if cachectic patients are seized with a vertigo, weakness of the

^a Lib. i. cap. xvi. pag. 47.

memory, a tremor, and sleepiness, there is reason to suspect that the viscid, or watery humours begin to be collected in the encephalon; whence an apoplexy is to be feared. But if they begin to breathe with difficulty upon the least motion, we have reason to conclude, that the cavity of the thorax, or the lungs themselves, are filled with water.

But the degree or state of a cachexy is determined from the length of time the disease has continued, and the effects it has produced.

Voracious children often become cachectic, but when the primæ viæ are cleared from the load of humours there collected, they usually recover by a proper diet, and the use of roborants, unless the disease has been too long neglected.

A P H. MCLXXIV.

BUT it is moreover apparent, that the cure of a cachexy requires, 1. Sometimes to correct the too great acrimony of the fluids, and to thicken them when too thin. 2. To resolve such as are glutinous and stagnant. But as these too states of the fluids may arise from different causes, (Aph. 1168, to 1170.) it will be necessary to vary the remedies, and the method of using them, according to the variety of the causes.

Having considered the causes, various effect, and the diagnosis and prognosis of a cachexy, we come now to treat of the cure. But here, as the humours are either too thin, or too glutinous, two indications arise, each of which deserves our consideration.

1.] Some physicians have maintained, that it was impossible for the humours to hurt by too great a thinness, and have therefore advised all persons indifferently

ferently to be perpetually diluting their blood with warm watery liquors; but they have never rightly considered the healthy nature of the animal fluids. For in the most healthy and robust people, the blood has a considerable density, and immediately hardens into a solid cake, when it is taken from a vein. If they had considered this practical observation, they would have easily perceived, that a too thin state of the fluids, must render a strong and healthy person in the condition of one that is weak and valetudinary. Moreover each particular humour ought to have a due degree of thickness to keep it within its proper vessels. For if the red part of the blood were once reduced to the thinness of the serum, the vessels would soon be empty; or if the serum were reduced to the thinness of the lymph, which transpires through the exhaling vessels of the skin, the whole body would be exhausted in a very little time. It is therefore apparent, our humours may offend by a too watery state. But since the red part of the blood confined within the larger arteries and veins, receives its motion from that of the heart and arteries, and communicates the same to the other humours, and as the natural heat of the body is excited and spread by the attrition of the red part of the blood against the sides of resisting vessels, therefore when the blood is too watery, the motion and attrition of the blood will be considerably weakened, and the heat of the body proportionably lessened: hence the watery liquors will not easily be exhaled from the body, but remain therein, distend the vessels, and be accumulated in the cavities of the body, so as to produce a cachexy or a dropsy.

But there is another kind of morbid fluidity, for want of a due pressure of the humours by the vital and elastic force of the vessels and viscera, or from the dissolving force of some morbid liquor intermixed with them, which destroys their texture. Certain it is that the chyle is less dense than the red blood,

blood, or its serum ; because it floats upon the surface of both, but by repeated circulations, it acquires a greater density, and changes into our own nature. It seems to be an established principle that the lungs do, by their action chiefly conduce to this greater density and assimilation of the chyle, ^a which first undergoes the triture of the lungs, before it circulates with the blood through the arteries.

Sometimes morbid matter flows with our humours through the vessels, and dissolves their texture : this is observable in diseases both acute and chronical. When we treated upon a continual putrid fever at Aph. 730, it was there observed, that an acrid stimulus applied to the body, or produced therein from a degeneration of the humours, will excite a fever which shall dissolve the blood, and occasion very dangerous hæmorrhages. *Wepfer* observed the same in petechial and malignant fevers, and found isinglass of great service, by giving a due consistence to the blood. It is therefore evident that the humours may be too thin in cachectic people, and that they ought to be corrected in order to restore health.

2.] It is likewise plain, that our humours have a certain degree of density and cohesion, but then it ought to be such as may easily be overcome by the force of the heart and arteries, otherwise they would stick in the extremities of the vessels, and produce obstructions. What the causes are that give birth to this viscosity in the humours, we formerly explained, in treating upon obstructions at Aph. 115. If the lentor and cohesion of the humours arises from a too violent circulation, and great strength of the vessels, it is then termed an inflammatory spissitude ; but when from too languid a circulation, and weak vessels, or from a loss of the fluids, it is then termed a cold or viscid lentor. The curative indication therefore, in this case, is to resolve and render

^a Boerhaav. Instit. Med. §. 208.

fluxile that glutinous viscid which begins to stick in the extremities of the vessels.

But as a dissolved state of the humours may likewise arise from various causes, and be also complicated with acrimony, it is evident, that nothing in general can be here determined; but we must carefully endeavour to find out the fault in the humours, and from what causes it arises; for these being once known, it will be easy to determine what to be done, and by what means. For instance, if the humours are too thin, from an abuse of watery liquors, the cure is effected by a dry regimen and diet, and by every means that strengthen the over-relaxed vessels: but if they are dissolved by some contagious miasmata, the indication is to correct and weaken the same by plenty of watery drinks. In like manner, when there is an inflammatory density of the humours, the vessels are to be relaxed, but when a cold pituitous lentor prevails, the strength of the vessels is to be increased. The same rule is to be observed in correcting the several kinds of acrimonies.

A P H. MCLXXV.

THE greatest care must be taken, that the patient's diet be of such things as come nearest to the nature of healthy humours, easily digestible, and contrary to the particular cause of the disease, and most grateful and agreeable to the stomach.

From the definition of a cachexy at Aph. 1166, it appears, that nutrition is depraved, and that every kind of aliment is not equally proper. Such therefore are to be chosen as are easily digestible, and opposite to the peculiar nature of the disease; for example, if the cachexy be joined with a phlegmatic cacochymy, all mealy and gelatinous substances are

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to be avoided in diet, lest the tenacity of the humours should be increased thereby. But if the cachexy arises from too thin a state of the humours, then such things are serviceable, which inspissate the dissolved fluids. If cachectic patients begin to swell with watery humours, flesh broths must be either omitted or sparingly used. In this case, let the patient eat the flesh of young animals roasted, river fish broiled, with biscuit, and a small allowance of good wine.—In the mean time such aliments are to be allowed as are grateful to the patient; for these are more easily digested, which are most pleasing to the palate.

A P H. MCLXXVI.

THEN we must endeavour to promote the digestion of the aliments, by the use of sauces, by generous wine, by exercise, and a clear air.

A P H. MCLXXVII.

BUT we must take care, that the organs of the first concoctions be kept in proper order, by mild digestives, emetics, purgatives, and strengtheners.

As the primæ viæ are commonly loaded, in cachectic habits, with crude indigestible humours, or with a viscid phlegm, the curative indication requires, that this load be expelled the body. If the appetite fails, or if sickness attends, a gentle vomit is generally of service. If the intestines are likewise loaded, a gentle purge given at intervals commonly carries off the load. After purging, such medicines may be administered as resolve and attenuate viscidities,

as sal polychrest, soluble and regenerated tartar, &c. dissolved in some distilled water, and sweetened with honey; and where the visciduity is great, oxymel of squills will be of principal use.

At the same time such things as strengthen the stomach, and act by a gentle aromatic stimulus will also be of service, and more especially when the viscid crudities have been evacuated from the primæ viæ. For this purpose, the pontic wormwood, mint, lesser centaury, gentian, calamus aromaticus, may be given with great advantage, either in the form of a conserve, or infused in wine. Myrrh, opoponax, galbanum, sagapenum, &c. taken to the quantity of six or eight grains every three or four hours, in the form of pills, will answer the same intention; and thus the stomach and intestines will be supplied with a fragrant spiciness, which likewise dissolves viscidities. The elixir aloës, and such like officinal tinctures will answer the same end.

A P H. MCLXXVIII.

WHEN the primæ viæ are opened by the use of these remedies, and the morbid matter sufficiently attenuated, then we must use attenuating, diuretic, and sudorific medicines.

But diuretic and sudorific medicines are only proper in a cachexy, when it inclines to a leucophlegmatia, or an anasarca.

A P H. MCLXXIX.

LASTLY, we must use chalybeate, alkaline, and soapy medicines, with the exercises of running and riding, frictions, and warm bathing.

After

After the depraved humours are evacuated by the fore-mentioned remedies, there remains always a great weakness and flaccidity in the solid parts, and if these are not duly strengthened, the patient soon relapses into his former state. But in what manner, and by what means the solids are to be strengthened was shewn at Aph. 28, where chalybeats are recommended for their singular efficacy in this case.

Alcaline salts, and soaps prepared of them, have great efficacy in resolving viscid humours: but then these are not so proper when the patient is under a course of chalybeats. For steel-filings readily dissolve in an acid prepared from vegetables, and if an alcali be added to the solution, the iron precipitates or falls to the bottom in the appearance of a yellow earth or ochre, which being entangled in the mucus of the primæ viæ, may harden into a coagulum hardly resolvable, and frequently occasions great uneasiness to the patient.

The exercises mentioned in the text may be used after the cachexy is removed, but not before; for it is then not only impracticable, but must be attended with danger, as the stagnant humours would be suddenly put into motion, and in a little time, the lungs would be oppressed by the viscid lentor impacted therein by an increased circulation. For this reason, cachectic patients immediately fall into a panting and difficult respiration, when they move hastily, or go up any ascent.

Warm bathing is recommended by *Celsus* * for the cure of a cachexy, with a view of carrying off the depraved humours by sweating; but as a cachexy is commonly attended with a relaxed state of the solids, warm bathing does not seem so very proper, unless the water be impregnated with the warmer aromatic herbs. If the redundant are to be carried off by sweats, it will be better effected by the use of

* Lib. iii. cap. 22.

a dry or hot stove than by warm water : but if the design be to strengthen the relaxed solids, cold bathing will be more serviceable, in which *Aetius* ^a so much confided, as to pronounce it “ a compendious “ cure for the whole distemper.”

A P H. MCLXXX.

BUT the remedies ought to be of various kinds, and variously prepared, and applied according to a known proximate cause.

If we consider what has been said at Aph. 1168, of the causes of a cachexy, it will appear evident, that different and even opposite remedies are sometimes required in the cure of it. When the body swells with viscid humours from a weakness of the solids, corroborants will then be of use : but when the humours are dissolved and drained from the body, without being restored again by fresh supplies of nourishment, the vessels collapse, and the whole body wastes by a slow marasmus. In this state, moistening and gently incrassating medicines are required.

But the preparation of the remedies themselves must also be various in different circumstances. For instance, to a girl labouring under the green-sickness from a load of viscid inactive phlegm, steel dissolved in a vegetable acid should rather be given than in substance. On the contrary, if there be an acid in the *primæ viæ*, steel is best given in substance, because it obtunds the acid, and produces all the effects of steel dissolved in an acid. It is therefore plain, that the physician ought to derive the method of cure from a knowledge of the causes of a cachexy, and consequently that very different methods are to be pursued.

^a Serm. x. cap. 19.

A P H. MCLXXXI.

BUT when a consumption and cachectical wasting of the body arises from too great an acrimony of the humours, the particular kind of acrimony must, if possible, be discovered. 1. By finding out the cause of the cachexy. 2. By examining into the nature of the disease, and the constitution of the patient. 3. By the symptoms. 4. By the excretions.

In a state of health, there is no very remarkable acrimony, either in the fluid, or in the solid parts of our body; for although healthy blood has something of a saline taste, yet it is of so soft and mild a nature, as to give no uneasiness to the eye, into which it is dropt. Even the bile itself, that has the greatest acrimony of all our humours, is easily tolerable to the eye, while it is fresh. Healthy urine is indeed acrid, but it is an excrementitious humour, that is not to be retained in the body, but expelled from it. No sooner, therefore, does acrimony prevail in the humours but nutrition becomes depraved, and the body wastes.

Children afflicted with an acid acrimony commonly fall into a miserable wasting, while their bellies swell with the indigestible remains of their food. In an inveterate scurvy, where the acrimony is greater, an atrophy ensues, as was observed at Aph. 1151. No. 4. In an ulcerated cancer, when the acrid sanies of a cancer infects the blood, we see the stoutest bodies pine away in a true marasmus, although they take a due quantity of the best nourishment. It is therefore apparent, that acrimony of the humours may be the cause of a consumption or cachectical tabes, which is also observed by *Celsus* *.

* Lib. iii. cap. 22

But that the cure may be happily effected, the peculiar nature of the prevailing acrimony ought to be first known, as far as the rules of art can help us to discover it; for it is certain, that sometimes a marasmus springs from latent causes.

1. The causes of a cachexy were before recited, we must therefore discover which of them give rise to the distemper, and whether that cause inclines to produce any acrimony, and of what kind. But above all, it must be considered, what kind of diet the patient used. For example, we justly expect an acid acrimony to prevail in infants who live entirely on a milk, and the muriatic acrimony in those who have lived a long time upon salted provisions. And the same may be truly said of the other kinds of acrimony.

2. For in those of a warm constitution, and who have been long afflicted with acute diseases, if a cachexy follows, the humours then degenerate into an alkaline acrimony. In a cold constitution, or in chronic diseases, they rather incline to a sluggish mucous viscosity, which, is seldom attended with acrimony, at least in the beginning.

3. In general, pains that arise without the signs of an increased circulation, or any great obstruction, or from erosions of the parts without any swelling, are signs of a prevailing acrimony^a. But acrimony is not always the cause of pain, for we see the sharpest pains suddenly arise from inflammations only in the most healthy habits, in which no signs of acrimonious humours were ever observable, but in this case there is an increased motion of the humours. However, where pains arise without heat or swelling, physicians have just grounds to ascribe them to acrimony. The symptoms which attend the several kinds of acrimony are so accurately enumerated in our author's^b *Semiotics*, that it would be superfluous to repeat them

^a H. Boerhaav. *Instit. Med.* §. 911.

^b *Ibid.* §. 912. & seq.
here.

here. See also what has been said of acrimony at Aph. 63, 64, 85, 86.

4. The excretions shew the state of the blood and humours. Thus, if an alkaline acrimony prevails, the urine is acrid, thick, brown, frothy, and fetid; and the fæces have also a cadaverous smell; and even the sweat is sometimes fetid. If an acid acrimony prevails, the urine is without colour, sometimes scalding, thick, white, with a copious gross sediment. The fæces are green, and smell sour; and sometimes the sweat also. In the muriatic acrimony, the urine is salt, but putrifies slowly, and deposits a thick sediment, with a shining pellicle on the surface. An attention to all the particulars of this aphorism will lead the expert physician into a knowledge of the prevailing acrimony.

A P H. MCLXXXII.

WHEN the particular kinds of acrimony are known, they are to be corrected by their contraries.

We have already shewn by what means the acid and alkaline acrimony are to be corrected in particular chapters on these subjects: on the other kinds of acrimony, see what was said at Aph. 1051, where we treated upon the general causes of chronical diseases.

Of the E M P Y E M A.

A P H. MCLXXXIII.

WHEN pus is collected in the cavity of the thorax, betwixt the lungs and the pleura, the disorder is called an *empyema*.

A P H. MCLXXXIV.

THE disorder therefore supposes a purulent vomica to have broke open, the matter of which escaping, is received into the cavity of the thorax.

Pus collected in the cavity of the thorax, supposes a preceding abscess, which it is usual to call a vomica, so long as it continues whole; but when it breaks, it then becomes an empyema. For it does not appear that humours collected in the cavity of the thorax, can be ever converted into true pus. *Hippocrates*^a has indeed said, "that extravasated blood must of necessity be suppured." But the word used here for suppuration, is used to signify any kind of corruption of blood, which is very different from laudable matter. Thus blood collected in the cavity of the thorax may putrefy, but is by no means changed into pus. We shall now enumerate those parts from which an abscess breaking, may pour out its contents into the thorax.

^a Aph. xx. Sec. 6.

A P H. MCLXXXV.

SUCH are vomicas. 1. Of the lungs, arising either from inflammation, a spitting of blood, or from a matter that cannot be resolved, impacted therein. 2. Of the pleura, from an inflammation, a slight wound given externally, and quickly healing outwardly, but breaking inwardly, or from a contusion, or latent rupture coming to a suppuration. 3. Of the diaphragm inflamed, suppurated, and breaking in its upper part towards the chest. 4. Of the mediastinum affected in the same manner: and also, 5. Of the pericardium itself.

1.] We have already shewn, in what manner, and with what signs an inflammation of the lungs changes into a suppuration, when we treated upon the peripneumony at Aph. 820, 867; but it was particularly remarked at Aph. 836, that if the suppurated lungs pours out its matter into the cavity of the thorax, it produces an empyema that is commonly fatal.

But it sometimes happens that matter is gradually collected in the lungs, or the other viscera, whereby an obstruction is formed; which indeed is slight at first, and attended with but few symptoms, but such as may increase by a continuance of the same causes, and at length form a small vomica, or abscess. We see in catarrhus disorders a great quantity of thick matter pressed out from the extremities of the arteries into the aspera arteria, from whence it is discharged by coughing. If now this viscid matter, be from any cause retained, it will form an obstruction, that may soon be followed with a vomica of the lungs. I have often seen such latent vomicas, which have been

been mistaken for a cold or catarrh. When such obstructions in the lungs are of no great extent, they will continue a long time without being discoverable by any apparent signs, and yet at last suppurate, and produce a very considerable vomica. *Baglivi* observed, that these tubercles will lie latent many years, without giving the patient any sensible uneasiness, but at length shew themselves plainly enough.

2.] That vomicas are sometimes formed in the pleura and intercostal spaces, was demonstrated in the history of the pleurisy, especially at Aph. 894. And in what manner an empyema may arise from a wound in the thorax ill cured, was declared at Aph. 298. It was likewise observed at Aph. 324, that extravasated humours lodged under the entire skin, if they are not absorbed by the veins, may become acrimonious by stagnation, and produce inflammations, suppurations, &c. therefore an empyema may arise from a contusion of the thorax.

3.] A vomica seated in the diaphragm may also break downwards into the cavity of the abdomen, and produce a purulent ascites. But see what was said at Aph. 907, 910, where we treated of a paraphrenitis.

4, and 5.] Of these we have also treated at Aph. 877. At the same time consult what has been said of an inflammation, the mediastinum, and pericardium at Aph. 913.—At the same time, it is to be observed, that pus collected in the cavity of the pericardium, or within the duplicature of the mediastinum, does not, properly speaking, constitute an empyema, since the matter is not lodged betwixt the lungs and pleura.

A P H. MCLXXXVI.

AN approaching empyema is known, 1. From an inflammation of the five parts mentioned at Ahp. 1186, which is not removed, either by coction, revulsion, a crisis, or by medicines, but terminates with vague shiverings, a slight fever, increasing in the evening, unsettled heats, a sense of weight instead of pain, a difficult breathing, and loss of appetite, and thirst. See Ahp. 833, 892, 913.

A P H. MCLXXXVII.

AN empyema now formed is known, 1. From the inflammation continuing twenty days without any critical discharge. 2. From the signs of a vomica in the five parts above specified, disappearing. 3. From a new kind of pain, a cough, dyspnæa, and a discharge of saliva, which soon after cease. 4. From a dry cough, a weight on the diaphragm, an inability of lying but upon one side, a fluctuation of the matter upon motion, a slow fever, redness of the cheeks, hollowiness of the eyes, a heat in the ends of the fingers, a recurvation of the nails, and a tumour of the abdomen.

1.] It is certain, that when an inflammation of the lungs, pleura, diaphragm, &c. has continued for twenty days without any critical discharge, or translocation of the morbid matter, a suppuration is then formed, though we cannot be thence assured the purulent vomica is broke, as the times of the rupture vary considerably. This appears from the testimony
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of *Hippocrates* produced at Aph. 894, where we treated of a suppurated pleurisy.

2.] Upon the signs of a vomica, we treated at Aph. 835, and 893, but as soon as the vomica breaks, and the matter falls into the cavity of the thorax, all the symptoms are considerably abated, and even seem sometimes to be entirely removed, which *Hippocrates* * has likewise remarked, where he describes a vomica concealed in the lungs. His words are, “ If the matter is not expectorated,—it “ breaks out from the lungs into the breast, and “ after breaking, the patient seems to be well.—But “ in process of time the breast is filled with matter, “ and all the symptoms are more troublesome than “ before.”

3.] It was observed at Aph. 894, that the pain grows less when the inflamed parts change into an abscess; but yet the difficulty of breathing and cough, still continue. When the abscess is daily increased by new matter, the membranes which contain the pus are more and more distracted, and the pain is greatly increased. This increase of pain is often by unskilful physicians mistaken for a new inflammation, who order repeated venesections to relieve the pain, by which the patient is weakened and exhausted. But if they had attended to those appearances that happen in inflammations of the external parts of the body, they would easily have seen the reason of this new pain. For in a violent phlegmon in the hand, there is severe pain while the parts begin to suppurate, which again lessens when matter is formed. But when the external integuments are distended by the increasing matter, the pain becomes extremely severe, but ceases immediately by letting it out by incision, or by relaxing the tense skin with emollient cataplasms.

* De Morb. Lib. iii.

4.] A cough here arises from the matter compressing the lungs, and hindering their free dilatation by the inspired air. But when the matter by confinement is rendered more acrid, the cough then increases; but it is a dry cough, because none of the matter poured out into the thorax can be discharged by it; but only a portion of that salutary mucus that lines the air-vessels of the lungs. And as the matter must naturally fall to the lower part of the thorax, it will cause a sense of weight upon the diaphragm.—In this state, the patient lies easily enough on his back, because the diaphragm descends much lower towards that part; for the same reason, he is desirous of sitting upright, when a considerable quantity of matter is collected in the thorax; for by its weight, the diaphragm is pressed down into the abdomen, and thereby the capacity of the thorax is enlarged, and the respiration more easily performed. But when the patient lies upon the sound side, the weight of the matter presses the mediastinum into the opposite cavity of the thorax, whereby the expansion of the sound side of the lungs is impeded; and the anguish he suffers, obliges him to change his posture. There is also a fluctuation of the matter, which the patient perceives upon turning himself in the bed, and even sometimes heard by the attendants. The cheeks look red, from a difficult circulation of the blood through the lungs, and of course the blood returning from the head by the jugular veins, is more slowly thrown into the right ventricle of the heart; whence the blood-vessels of the face are more than usually distended.

But a slow fever always attends an empyema, from the thinner parts of the matter absorbed and mixed with the blood: and as this fever gradually wastes the whole habit of the body, it is at length attended with extreme leanness, or a consumption of all the fat. Therefore, when the fat spread under the globes of the eyes, to sustain and facilitate their motions, is

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consumed, the eye-balls sink lower into their orbits, and appear hollow. For the same reason, the ends of the fingers feel hot, the nails grow crooked, and the palms of the hands burn.—But a swelling of the abdomen then only appears, when the weight of the matter presses down the diaphragm so as to make it protuberate. Having now considered all that relates to the diagnosis, we are next to take a view of the mischiefs that may arise from purulent matter confined in the cavity of the thorax.

A P H. MCLXXXVIII.

THE effects of an empyema are then, 1. A continual accumulation of matter draining from the broken abscess, neither as yet cleansed nor healed. 2. A continual agitation, increased malignity, putrefaction, fætor, and liquefaction of the matter confined in a warm, moist, and close place. 3. A difficult elevation of the diaphragm, and expansion of the lungs, whence a short panting, and erect respiration, a danger of suffocation when the patient lies down, and an impossibility of lying on the sound side, a continual dry cough, and anxiety. 4. A maceration, erosion, and wasting of the lungs, pleura, diaphragm, pericardium, and heart itself, into a corrupt matter, whence a hectic fever, with a small and quick pulse, a redness of the cheeks, a continual thirst, loss of appetite, extreme weakness, and syncope. 5. Hence the humours become unfit for nutrition, circulation, secretion and excretion; whence a tabes, atrophy, a dissolution of the fibres, a putrefaction of the fluids; which are therefore, discharged, either through the eroded lungs by spitting,

346 Of the EMPYEMA. Aph. 1189, &c.
spitting, or by a sanious and fatal diarrhæa,
night sweats, or by pustules breaking out in
the face. The nails grow crooked, look of a
shining yellow colour, and the countenance tru-
ly hippocratical.

A P H. MCLXXXIX.

THE cure of an empyema varies according
to the different causes and degrees of the
disease itself.

A P H. MCXC.

FOR when once it is known, that there is a
vomica in the lungs, pleura, diaphragm,
mediastinum, or pericardium, all endeavours
ought to be used to break it as soon as possible,
and to determine the matter towards the exter-
nal parts; which is effected either by the actual
cautery, or by the knife, medicines, or proper
motion.

A P H. MCXCI.

WHEN it is certain that the vomica is
broken, then the matter must immedi-
ately be brought away, 1. By expectoration, if
nature points out that way. 2. By urine, if it
contains any quantity of matter in it. 3. By
the paracentesis, or opening made into the tho-
rax, betwixt the fourth and fifth, or the fifth
and sixth short ribs, counting from below up-
wards, drawing the matter slowly, and at dif-
ferent times, deterging the thorax sometimes
with injections of honey and water, and then
closing the wound. And 4. by giving inter-
nally

nally great quantities of detergent vulnerary decoctions, with such as are antiseptic.

1.] It sometimes happens that the matter of a vomica is discharged by expectoration; but this seems chiefly to follow when the abscess breaks, so as to pour its matter into the air-vessels of the lungs, from whence it is brought through the aspera arteria by coughing. But if the matter rushes all at once into these vessels, there is then great danger of a sudden suffocation. If it pours out its matter only by a small aperture, it is then expectorated without any danger by coughing, which is likewise observed by *Aretæus*.

2.] It was proved from undoubted observations at Aph. 406, that matter confined in an abscess may be discharged both by urine and stool. All the ancient physicians have asserted this, and depend greatly upon that evacuation which is made by urine. *Diemerbroeck* * had the care of a Merchant, in whom he could plainly hear the fluctuation of matter contained in the thorax, upon moving his body backward and forward. This man in the space of two days discharged by urine two chamber-pots full of good concocted pus, by which he was happily cured. In the same place he gives two other observations that confirm the same thing. But in the Medical Essays there is yet a more surprising event of an empyema, Vol. v. pag. 422. It is therefore evident, that after a vomica has been broken four or five days, the physician ought to attend to the urine and stools, to see if any of the matter goes off by those discharges. The medicines and diet necessary in this case, are directed at Aph. 852, 853, where we treated of a peripneumony.

3.] How the paracentesis is to be performed, and with what cautions. See Heister, and other surgical writers.

* Anatom. Lib. i. pag. 98.

A P H. MCXCII.

IF the pus discharged be white, smooth, equal without fœtor, and not colouring the probe; if the patient be free from fever, thirst, or looseness; if he eats and digests well, is in other respects well, and the air be hindered, as much as possible, from entering into the cavity of the thorax, there are hopes that he will recover.

A P H. MCXCIII.

BUT if the matter appears brown, thin as ichor, stringy, fetid, and colours the probe as if it had been heated in the fire; or if it be bloody, and rushes out all at once, the patient is in the highest danger, and he will die soon, or fall into a phthisis.

A P H. MCXCIV.

IF the mediastinum is corroded by the matter, upon opening the thorax, the patient is often suddenly suffocated.

A P H. MCXCV.

IF the empyema is of long standing, the strength exhausted,—the hair falls off, attended with a colliquative diarrhœa, and wasting of the body; the paracentesis only hastens the patient's death.

For by these signs we are assured that the matter is highly acrimonious, and the blood tainted with a putrid cacochymy.

